Colour television **Chassis**

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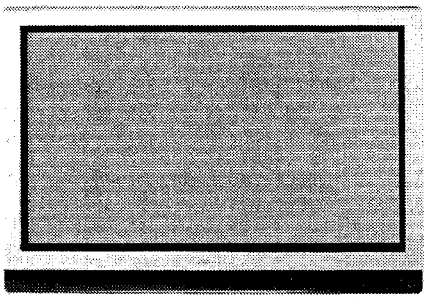

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PHILIPS

1. Technical Specifications, Connection, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications
1.2 Connection Overview
1.3 Chassis Overview

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

1.1 Technical Specifications

1.1.1 Vision

Display type : LCD-VA, WXGA
Screen size : 32" (82 cm), 16:9
Resolution (HxV pixels) : 1366(*3)x768p
Contrast ratio : 800:1
Light output (cd/m^2) : 450
Response time (ms) : 12
Viewing angle (HxV degrees) : 170x170
Tuning system : PLL
TV Colour systems : PAL B/G, D/K, I
: SECAM B/G, D/K, L/L'

Video playback : PAL
: SECAM

Supported formats : VGA(640x480,60Hz)
: 640x480i - 1fH
: 640x480p - 2fH
: 720x576i - 1fH
: 720x576p - 2fH
Channel selections : 100 presets
: VHF
: UHF
: S-band
: Hyper-band
Aerial input : 75 ohm, Coax
: IEC-type

1.1.2 Sound

Sound systems : 2CS B/G, D/K
: NICAM B/G, D/K, I, L

Maximum power (W_{RMS}) : 2 x 15

1.1.3 Multimedia

Supported digital media : Compact Flash I & II
: Memory Stick
: Microdrive
: Secure Digital Card
: Multi Media Card
: Smart Media Card
Supported file formats : JPEG
: MP3
USB input : USB1.1

1.1.4 Miscellaneous

Power supply:
- Mains voltage (V_{AC}) : 220 - 240

- Mains frequency (Hz) : 50

Ambient conditions:
- Temperature range (°C) : +5 to +40
- Maximum humidity : 90% R.H.

Power consumption
- Normal operation (W) : ≈ 185
- Standby (W) : < 2

Dimensions (WxHxD in cm) : 87.5x61x10.7

Weight (kg) : 20

1.2 Connection Overview

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Side Connections

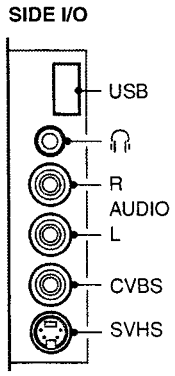

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Figure 1-1 Side I/O connections

USB1.1 (Input/Output)

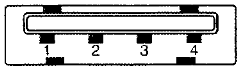

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Figure 1-2 USB (type A)

1	- +5V	
2	- Data (-)	
3	- Data (+)	
4	- Ground	Gnd

Mini Jack: Audio Headphone - Out

Bk	- Headphone	32 - 600 ohm / 10 mW

Cinch: Video CVBS - In, Audio - In

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} / 10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

SVHS (Hosiden): Video Y/C - In

1	- Ground Y	Gnd
2	- Ground C	Gnd
3	- Video Y	1 V_{PP} / 75 ohm
4	- Video C	0.3 V_{PP} / 75 ohm

Digital Media Reader (Input)

This is a 6 in 1 card reader unit, connected via USB to the Small Signal Board.

1.2.2 Rear Connections

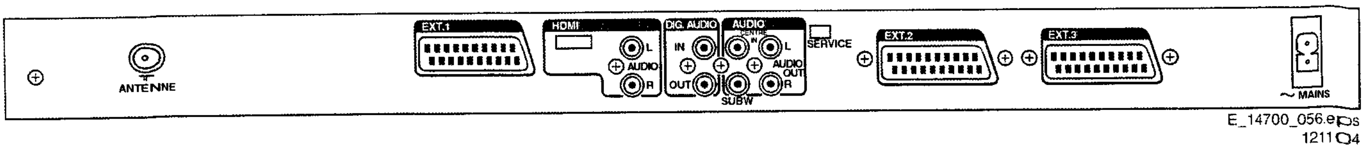

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Figure 1-3 Rear I/O

Aerial - In

-	- IEC-type (EU)	Coax, 75 ohm	⊤

Ext. 1: Video RGB/YPbPr - In, CVBS - In/Out, Audio - In/Out

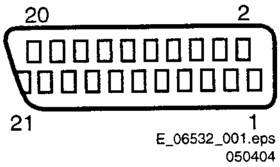

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Figure 1-4 SCART connector

1	- Audio R	0.5 V_{RMS} / 1 kohm	⊖→
2	- Audio R	0.5 V_{RMS} / 10 kohm	→⊖
3	- Audio L	0.5 V_{RMS} / 1 kohm	⊖→
4	- Ground Audio	Gnd	⏚
5	- Ground Blue	Gnd	⏚
6	- Audio L	0.5 V_{RMS} / 10 kohm	→⊖
7	- Video Blue/Pb	0.7 V_{PP} / 75 ohm	→⊖
8	- Status	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→⊖
9	- Ground Green	Gnd	⏚
10	- n.c.		
11	- Video Green/Y	0.7 or 1 V_{PP} / 75 ohm	→⊖
12	- n.c.		
13	- Ground Red	Gnd	⏚
14	- Ground Status	Gnd	⏚
15	- Video Red/Pr	0.7 V_{PP} / 75 ohm	→⊖
16	- FBL/Hsync	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	→⊖
17	- Ground Video	Gnd	⏚
18	- Ground FBL	Gnd	⏚
19	- Video CVBS	1 V_{PP} / 75 ohm	⊖→
20	- Video CVBS	1 V_{PP} / 75 ohm	→⊖
21	- Shield	Gnd	⏚

HDMI: Digital Video, Digital Audio - In

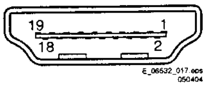

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Figure 1-5 HDMI (type A) connector

1	- D2+	Data channel	→⊖
2	- Shield	Gnd	⏚
3	- D2-	Data channel	→⊖
4	- D1+	Data channel	→⊖
5	- Shield	Gnd	⏚
6	- D1-	Data channel	→⊖
7	- D0+	Data channel	→⊖
8	- Shield	Gnd	⏚
9	- D0-	Data channel	→⊖
10	- CLK+	Data channel	→⊖
11	- Shield	Gnd	⏚
12	- CLK-	Data channel	→⊖
13	- n.c.		
14	- n.c.		
15	- DDC_SCL	DDC clock	→⊖
16	- DDC_SDA	DDC data	→⊖⊖→
17	- Ground	Gnd	⏚
18	- +5V		→⊖
19	- HPD		
20	- Ground	Gnd	⏚

Cinch: HDMI Audio - In

Rd	- Audio - R	0.5 V_{RMS} / 10 kohm	→⊖◎
Wh	- Audio - L	0.5 V_{RMS} / 10 kohm	→⊖◎

Cinch: Audio - Out

Rd	- Audio - R	0.5 V_{RMS} / 10 kohm	⊖→◎
Wh	- Audio - L	0.5 V_{RMS} / 10 kohm	⊖→◎

Cinch: Subwoofer - Out, Centre - In

Bu	- Center	0.5 V_{RMS} / 10 kohm	→⊖◎
Bk	- Subwoofer	0.5 V_{RMS} / 10 kohm	⊖→◎

Service connector (UART)

1	- UART_TX		⊖→
2	- Ground	Gnd	⏚
3	- UART_RX		→⊖

Ext. 2: Video RGB/YPbPr - In, CVBS - In/Out, Audio - In/Out

1	- Audio R	0.5 V_{RMS} / 1 kohm	⊖→
2	- Audio R	0.5 V_{RMS} / 10 kohm	→⊖
3	- Audio L	0.5 V_{RMS} / 1 kohm	⊖→
4	- Ground Audio	Gnd	⏚
5	- Ground Blue	Gnd	⏚
6	- Audio L	0.5 V_{RMS} / 10 kohm	→⊖
7	- Video Blue/Pb	0.7 V_{PP} / 75 ohm	→⊖
8	- Status	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→⊖
9	- Ground Green	Gnd	⏚
10	- Easylink P50	0 - 5 V / 4.7 kohm	→⊖⊖→
11	- Video Green/Y	0.7 or 1 V_{PP} / 75 ohm	→⊖
12	- n.c.		
13	- Ground Red	Gnd	⏚
14	- Ground Status	Gnd	⏚
15	- Video Red/Pr	0.7 V_{PP} / 75 ohm	→⊖
16	- FBL/Hsync	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	→⊖
17	- Ground Video	Gnd	⏚
18	- Ground FBL	Gnd	⏚
19	- Video CVBS	1 V_{PP} / 75 ohm	⊖→
20	- Video Y/CVBS	1 V_{PP} / 75 ohm	→⊖
21	- Shield	Gnd	⏚

Ext. 3: Video RGB/YPbPr - In, CVBS - In/Out, Audio - In/Out

1	- n.c.		
2	- Audio R	0.5 V_{RMS} / 10 kohm	→○
3	- n.c.		
4	- Ground Audio	Gnd	⏚
5	- Ground Blue	Gnd	⏚
6	- Audio L	0.5 V_{RMS} / 10 kohm	→○
7	- Video Blue/Pb	0.7 V_{PP} / 75 ohm	→○
8	- Status	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→○
9	- Ground Green	Gnd	⏚
10	- n.c.		
11	- Video Green/Y	0.7 V_{PP} / 75 ohm	→○
12	- n.c.		
13	- Ground Red	Gnd	⏚
14	- Ground Status	Gnd	⏚
15	- Video Red/Pr	0.7 V_{PP} / 75 ohm	→○
16	- FBL/Hsync	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	→○
17	- Ground Video	Gnd	⏚
18	- Ground FBL	Gnd	⏚
19	- Video CVBS	1 V_{PP} / 75 ohm	○→
20	- Video CVBS	1 V_{PP} / 75 ohm	→○
21	- Shield	Gnd	⏚

1.3 Chassis Overview

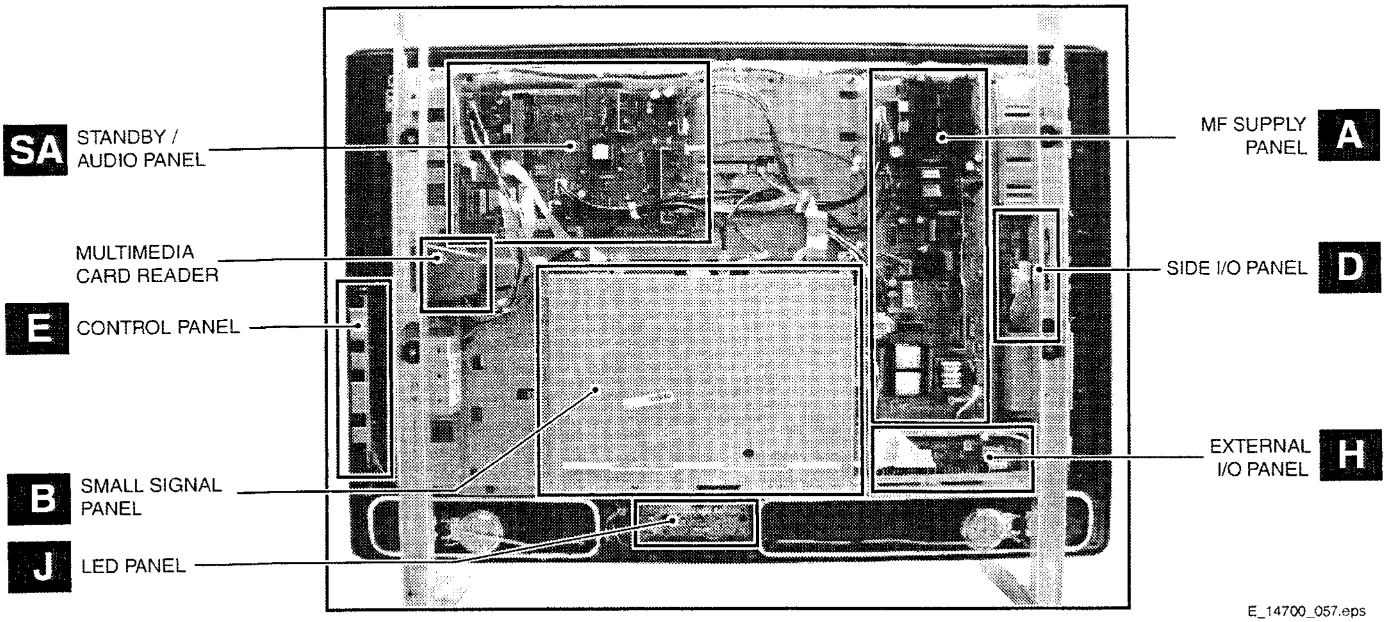
SA
STANDBY / AUDIO PANEL
MULTIMEDIA CARD READER
E
CONTROL PANEL
B
SMALL SIGNAL PANEL
J
LED PANEL
MF SUPPLY PANEL
A
SIDE I/O PANEL
D
EXTERNAL I/O PANEL
H

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Figure 1-6 PWB locations

2. Safety Instructions, Warnings, and Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:
- Connect the set to the Mains (AC Power) via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:
- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains (AC Power) lead for external damage.
- Check the strain relief of the Mains (AC Power) cord for proper function.
- Check the electrical DC resistance between the Mains (AC Power) plug and the secondary side (only for sets which have a Mains (AC Power) isolated power supply):
  1. Unplug the Mains (AC Power) cord and connect a wire between the two pins of the Mains (AC Power) plug.
  2. Set the Mains (AC Power) switch to the "on" position (keep the Mains (AC Power) cord unplugged!).
  3. Measure the resistance value between the pins of the Mains (AC Power) plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the Mains (AC Power) plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).

aligned under a microscope or magnifying glass. If this is not

- Where necessary, measure the waveforms and voltages with (⊓⊓) and without (⊠) aerial signal. Measure the voltages in the power supply section both in normal operation (①) and in standby (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the "double-D symbol", are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads (μ= x10^{-6}), nano-farads (n= x10^{-9}), or pico-farads (p= x10^{-12}).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General
Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal
As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.
After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be possible, try to align the (LF)BGA with any board markers.

To reflow the solder, apply a temperature profile according to the *IC data sheet*. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information
For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions)). After login, select "Magazine", then go to "Workshop Information". Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead Free Solder

Philips CE is going to produce lead-free sets (PBF) from 1.1.2005 onwards.
Lead-free sets will be indicated by the PHILIPS-lead-free logo on the Printed Wiring Boards (PWB):

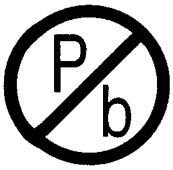


Figure 2-1 Lead-free logo

This sign normally has a diameter of 6 mm, but if there is less space on a board also 3 mm is possible.

In case of doubt wether the board is lead-free or not (or with mixed technologies), you can use the following method:

- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid mix of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions)
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair-helpdesk.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able
  - To reach at least a solder-tip temperature of 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch "off" unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If not to avoid, clean carefully the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened short before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-)pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection !).
  Do not re-use BGAs at all!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages**. While some may not be dangerous in themselves, they can cause unexpected reactions - reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download the User Manual from the following website:
http://www.philips.com/support
As the software upgrade is a new feature, it is explained below.

Philips Flat TV software upgrade

Introduction

Philips offers software upgrade capability for your TV using portable memory or USB mass storage compliant devices (e.g. USB memory stick, compact flash card...)
After you have completed a software upgrade, your TV will typically perform better.
What improvements are made depends on the upgrade software you are using as well as the software your TV contained before the upgrade.
You can execute the software upgrade procedure yourself.

Preparing a portable memory for software upgrade

For the procedure you will require:

- A personal computer with web browsing capability.
- An archive utility that supports the ZIP-format (e.g. WinZip for Windows or StuffIt for Mac OS).
- A preferably empty memory card or USB memory stick.
  Supported types: CompactFlash Card Type I & II, IBM Microdrive, Memory Stick, SecureDigital Card / Mini SD Card, SmartMedia Card, MultiMedia Card.
  Note: Only FAT/DOS-formatted portable memory is supported.

New software can be obtained from your dealer or can simply be downloaded from the **www.philips.com/support** website:

❶ Go to **www.philips.com/support** using your web browser.
❷ Follow the procedure to find the information and the software related to your set type.
❸ Select the latest software upgrade image and download it to your PC.

Copy the latest TV software from your PC to the portable memory:

❹ A software upgrade image consists of a Zip archive that contains the files that need to be copied to the portable memory.
Decompress the **complete archive** (including the directory structure PHILIPS\HETV\...) to the portable memory. The root directory of the portable memory should contain a directory "PHILIPS" containing a sub-directory "HETV" which will hold several files.
Note: Only use software upgrades that can be found on the ***www.philips.com/support*** *web site.*

Verifying the version of the TV software

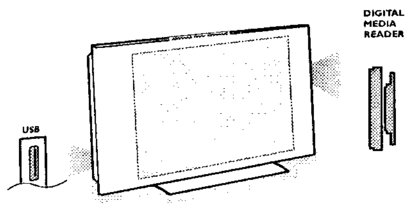
Before starting the software upgrade procedure, it is advised to check what the current TV software is.
The current TV software version can be seen in the Customer Service Menu.
To activate the Customer Service Menu quickly enter the code 1-2-3-6-5-4 on the remote control while the TV is on and the menu is not activated.

Example: TL31E-**1.1**_07281 is displayed.
The software version is 1.1.

CUSTOMER SERVICE MENU 1		
1	SW Version	TL31E-1.1_07281
2	Set Type	32PF9956/12
3	Production Code	AG1A0405000001
4	Code 1	00 00 00 00 00
5	Code 2	00 00 00 00 00
6	Volume	32
7	Brightness	37
8	Contrast	80
9	Colour	53
10	Hue	1

Software upgrade procedure

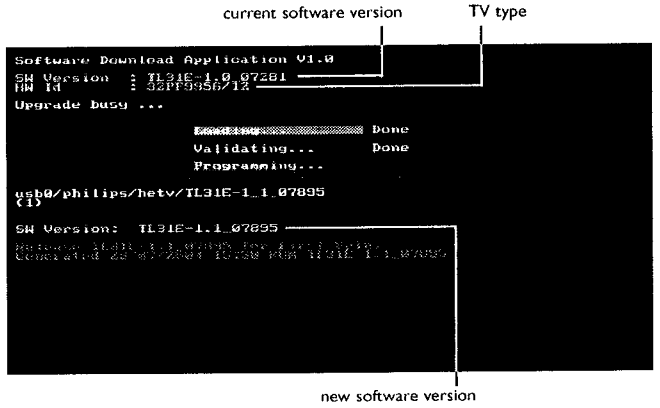
❶ Power off your TV and remove all inserted memory cards or connected USB devices.
❷ Insert the portable memory that contains the downloaded software upgrade:
In case of a memory card insert the card in one of the card slots at the right side of the TV.
In case of a USB memory stick connect it to the USB connector at the left side of the TV.



❸ Switch on your TV with the power switch ⏻ at the right side of the TV.
❹ At startup the TV will scan the memory card until it finds the update content. The TV will automatically go to the upgrade mode. After a few seconds it will display the status of the upgrade procedure.

Warnings:

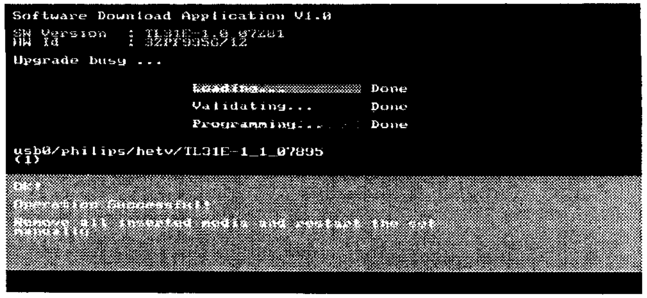
- *You are not allowed to remove the memory card during the software upgrade procedure!*
- *In case of a power drop during the upgrade procedure, don't remove the portable memory from the TV. The TV will continue the upgrade as soon as the power comes back.*



```
Software Download Application V1.0
SW Version    : TL31E-1.0_07281
HW Id         : 32PF9956/12
Upgrade busy ...

                    Loading           Done
                    Validating...     Done
                    Programming...

usb0/philips/hetv/TL31E-1_1_07895
(1)

SW Version:  TL31E-1.1_07895
```

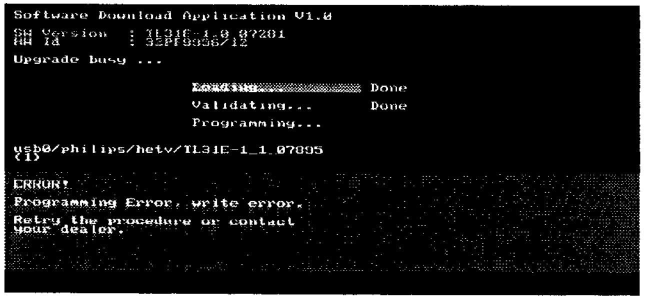
➎ When the software upgrade is completed you should see one of the following screens.

If the upgrade was successful.



```
Software Download Application V1.0
SW Version   : TL31E-1.0_07281
HW Id        : 32PF9956/12
Upgrade busy ...

                   Loading...            Done
                   Validating...         Done
                   Programming...        Done

usb0/philips/hetv/TL31E-1_1_07895
(1)

Remove all inserted media and restart the set
```

If an error occurred during the upgrade you should retry the procedure or contact your dealer.

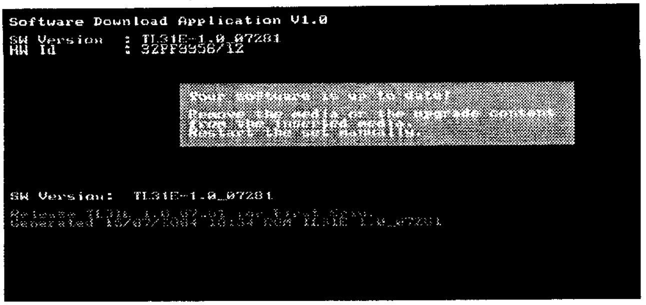


```
Software Download Application V1.0
SW Version   : TL31E-1.0_07281
HW Id        : 32PF9956/12
Upgrade busy ...

                   Loading...            Done
                   Validating...         Done
                   Programming...

usb0/philips/hetv/TL31E-1_1_07895
(1)

ERROR!
Programming Error, write error.
Retry the procedure or contact
your dealer.
```

➏ When the software upgrade was successful, remove the portable memory and restart your TV with the power switch ⏻ at the right side of the TV.
Your TV will start up with the new software.
Note: Once the upgrade is finished use your PC to remove the TV software from your portable memory by deleting the "PHILIPS" directory and all its contents.

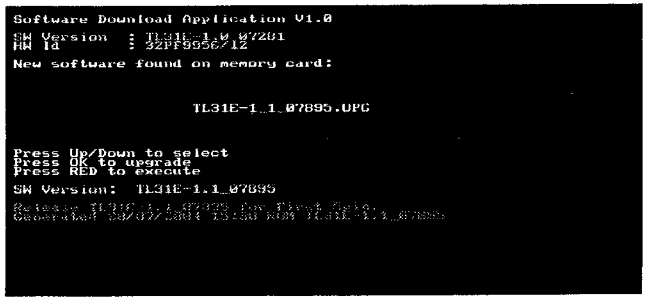
Notes

- If the software version of the upgrade was identical to the current one the TV will still go to the upgrade mode but the upgrade itself will not start automatically. A green message box will inform you if the TV software is up to date.



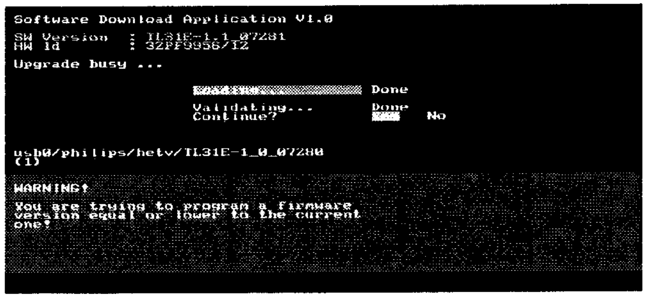
```
Software Download Application V1.0
SW Version   : TL31E-1.0_07281
HW Id        : 32PF9956/12

                        Your software is up to date!

SW Version:  TL31E-1.0_07281
```

- You can still overrule the warning manually by pressing any remote key. You will see a file selection box. Select the software upgrade file and press the **OK** key to start the TV software upgrade.



```
Software Download Application V1.0
SW Version   : TL31E-1.0_07281
HW Id        : 32PF9956/12
New software found on memory card:

                    TL31E-1_1_07895.UPG

Press Up/Down to select
Press OK to upgrade
Press RED to execute
SW Version:  TL31E-1.1_07895
```

- If you try to upgrade to software equal or lower than the current version, a confirmation will be asked just after the validation phase. Press the cursor left/right to select **Yes** or **No** and press the **OK** key to confirm.
Note: Downgrading to older software should only be done in case of real necessity.



```
Software Download Application V1.0
SW Version   : TL31E-1.1_07281
HW Id        : 32PF9956/12
Upgrade busy ...

                   Loading...            Done
                   Validating...         Done
                   Continue?                   No

usb0/philips/hetv/TL31E-1_0_07280
(1)

WARNING!
You are trying to program a firmware
version equal or lower to the current
one!
```

4. Mechanical Instructions

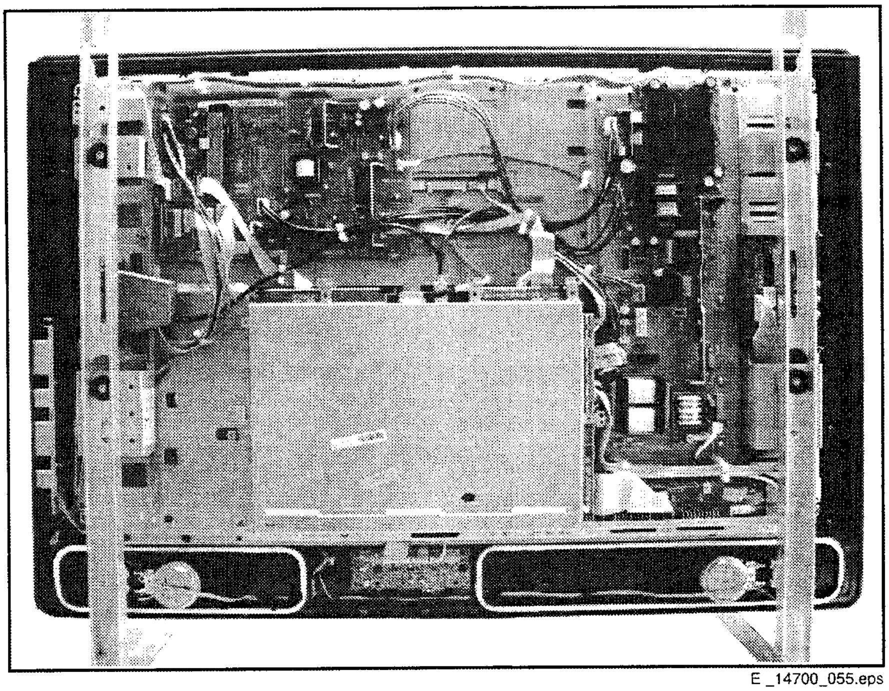
Index of this chapter:

4.1 Cable Dressing
4.2 Service Positions
4.3 Assy/Panel Removal
4.4 Set Re-assembly

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order.

4.1 Cable Dressing



E _14700_055.eps
300904

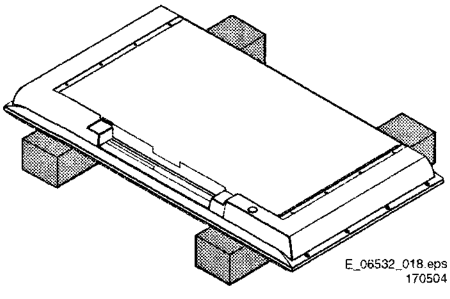
Figure 4-1 Cable dressing

4.2 Service Positions

For easy servicing of this set, there are a few possibilities created:

- The buffers from the packaging.
- Foam bars (created for service).
- Aluminium service stands (created for Service).

4.2.1 Foam Bars

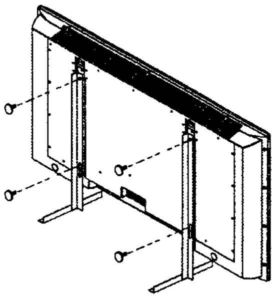


E_06532_018.eps
170504

Figure 4-2 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. By laying the TV face down on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments.
By placing a mirror under the TV, you can monitor the screen.

4.2.2 Aluminium Stands



E_06532_019.eps
170504

Figure 4-3 Aluminium stands (drawing of MkI)

The new MkII aluminium stands (not on drawing) with order code 3122 785 90690, can also be used to do measurements, alignments, and duration tests. The stands can be (dis)mounted quick and easy by means of sliding them in/out the "mushrooms". The new stands are backwards compatible with the earlier models.
Important: For (older) FTV sets without these "mushrooms", it is obligatory to use the provided screws, otherwise it is possible to damage the monitor inside!.

4.3 Assy/Panel Removal

4.3.1 Metal Back Plate

Caution: Disconnect the AC Power (mains) cord before you remove the metal back plate.

1. Place the TV set upside down on a table top, using the foam bars (see part "Foam Bars").
   Caution: do **not** put pressure on the display, but let the monitor lean on the speakers or the Front cover.
2. Remove all T10 screws from the metal back plate.
3. Remove the four "mushrooms" from the back plate.
4. Lift the back plate from the set. Make sure that wires and flat foils are not damaged during the back plate removal.

4.3.2 Rear Cover

1. Remove all T10 parker screws around the edges of the rear cover.
2. Lift the rear cover from the set.

4.3.3 Stand-by Supply/Audio Panel

1. Disconnect all cables from the Stand-by Supply/Audio panel.
2. Remove all T10 mounting screws from the Stand-by Supply/Audio panel.
3. Take out the Stand-by Supply/Audio panel (it hinges at the bottom side).

4.3.4 MF Supply Panel

1. Disconnect all cables from the MF Supply panel.
2. Remove all T10 mounting screws from the MF Supply panel.
3. Take out the panel.

4.3.5 Side I/O Panel

1. Disconnect the cable(s) from the panel.
2. Remove the T10 mounting screws that hold the assy.
3. Release the clamps and take out the panel from its bracket.

4.3.6 External I/O Panel

1. Disconnect the flat foil cable on the panel.
2. Remove the mounting screws near each connector at the connector plate.
3. Take out the panel.

4.3.7 LED Panel

1. Disconnect the cable(s) from the panel.
2. Remove the T10 mounting screws that hold the panel.
3. Take out the panel.

4.3.8 Control Panel

1. Disconnect the cable(s) from the panel.
2. Remove the T10 mounting screws that hold the assy.
3. Release the clamps and take out the panel from its bracket.

4.3.9 Multi Media Card Reader

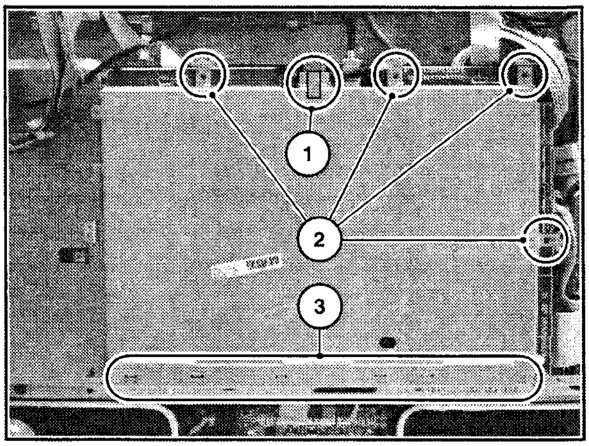
1. Unplug the related USB cable at the top of the SSB.
2. Remove the two T10 mounting screws that hold the assy.

When defective, replace the whole unit.

4.3.10 Speakers

After removal of the rear cover, you can access the speakers. **Note:** In the rear cover itself, two additional "passive" speakers are mounted. It is very important that they operate in a airtight environment. Be sure that the foam that makes the unit airtight is not damaged. Otherwise, replace it.

4.3.11 Small Signal Board (SSB)



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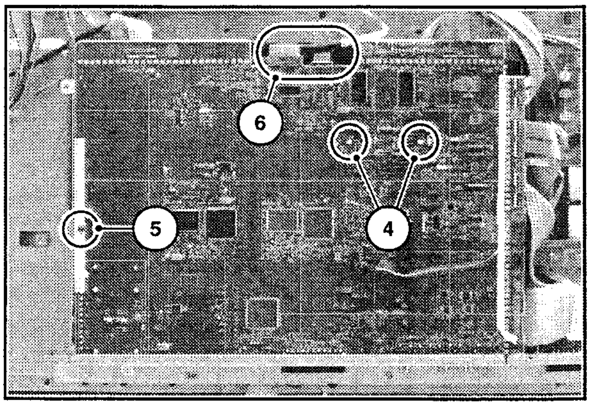
300904

Figure 4-4 SSB top shielding

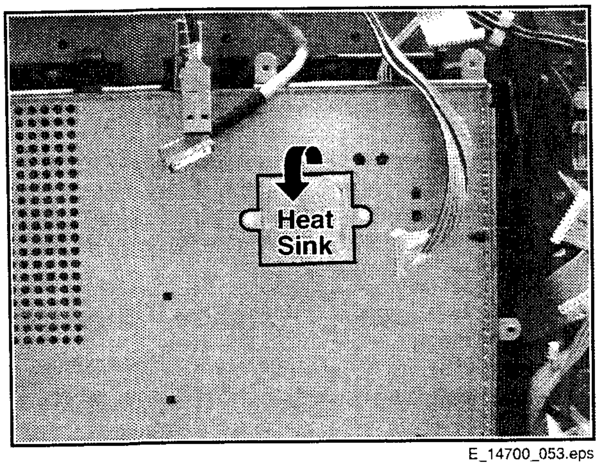


E _14700_054.eps
300904

Figure 4-5 SSB

1. Remove the fixing tape (1) on the LVDS connector.
2. Remove all fixing screws (2).
3. Lift the shielding at the top and shift it upwards. Some force may be necessary, as the shielding clamps at the connector side.
4. Remove all connector fixation screws at the connector plate (3).
5. Remove the mounting screw(s) from the SSB (5).
6. **Important:** Before lifting the SSB, release the two plastic clamps (4), with e.g. a pair of pliers, in order to release the heatsink of the Viper IC. If you forget this, the SSB cannot be taken out!
7. Unplug the LVDS and USB cables at the top of the SSB (6).
8. Lift the SSB, disconnect all other cables, and take out the SSB.
9. After removal of the SSB, you can see the Viper heatsink "sticked" to the bottom shielding by means of the thermal foam (see figure "Viper heatsink removal").

To remove this heatsink, **carefully** pull it away from the heatsink. When you do this properly, the thermal foam can be re-used (during non-use, keep it away from dirt).



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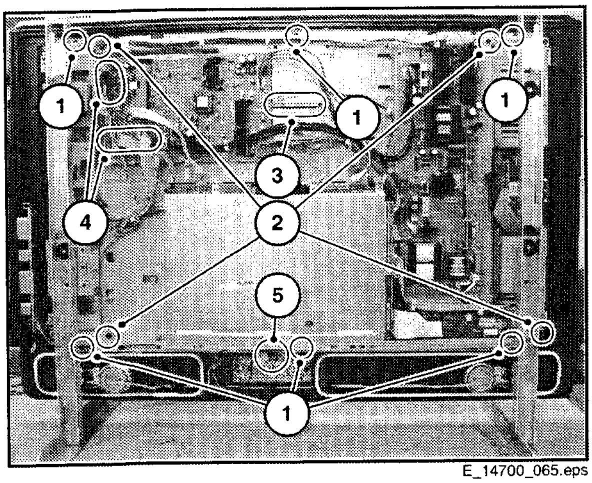
300904

Figure 4-6 Viper heatsink removal

4.3.12 LCD Panel



E_14700_065.eps
141004

Figure 4-7 LCD panel removal

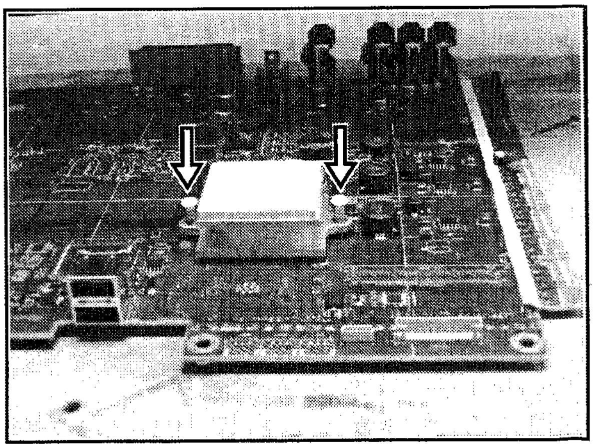
1. Remove the T10 screws (1) from the mounting frame.
2. Remove all LCD panel mounting T20 screws (2).
3. **Important:** Unplug the cable(s) at the LCD panel (3). **Be careful**, the LVDS connector (CN1) is very fragile!
4. Unplug the backlight and loudspeaker cables on the Audio/ Stand-by panel (4).
5. Unplug all cables on the LED panel (5).
6. Lift the metal frame (together with all PWBs) from the LCD panel. During lift, free the backlight and speaker cables.
7. After removal of the frame, you can lift the LCD display from the set.

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that all cables are placed and connected in their original position. See figure "Cable dressing".
- During re-assembly of the SSB, it is important that the heatsink of the Viper IC, together with the thermal foam, is mounted on the chip **before** the SSB is re-placed (see figure "Heatsink mounting"). Place the heatsink on top of the Viper IC (do **not** use cooling paste), and push the clamps through the appropriate holes in the PWB.
- Pay special attention not to damage the EMC foams on the SSB shields. Control that EMC foams are mounted correctly.
- Insulate the tuner pins, so that they cannot touch the shielding (see also figure "SDM Service jumper" in Chapter 5).



E_14700_051.eps
300904

Figure 4-8 Heatsink mounting

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points
5.2 Service Modes
5.3 Stepwise Start-up
5.4 ComPair
5.5 Error Codes
5.6 The Blinking LED Procedure
5.7 Protections
5.8 Repair Tips
5.9 Software Upgrading
5.10 Start-up flow charts

5.1 Test Points

The chassis is equipped with test points printed on the circuit board assemblies.

Perform measurements under the following conditions:
- Service Default Mode.
- Video: colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements below) and the TV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version read-out, and software upgrading.
Minimum requirements: a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose
- To create a pre-defined setting, to get the same measurement results as given in this manual.
- To override SW protections and make the TV start up to the step just before protection (a sort of automatic stepwise start up). See paragraph "Stepwise Start Up".
- To start the blinking LED procedure (not valid in protection mode).

Specifications
- Tuning frequency: 475.25 MHz for PAL.
- Colour system: PAL B/G.
- All picture settings at 50% (brightness, colour, contrast).
- All sound settings at 50%, except volume at 25%.
- All service-unfriendly modes (if present) are disabled, like:
  - (Sleep) timer.
  - Child/parental lock.
  - Blue mute.
  - Automatic volume limiter (AVL).
  - Auto switch-off (when no video signal was received for 10 minutes).
  - Skip/blank of non-favourite pre-sets.
  - Smart modes.
  - Auto store of personal presets.
  - Auto user menu time-out.

How to activate SDM
Use one of the following methods:
- Use the standard RC-transmitter and key in the code **"062596"**, directly followed by the "MENU" button.
  Note: It is possible that, together with the SDM, the main menu will appear. To switch it off, push the "MENU" button again.
- Short for a moment the two solder pads on the SSB, with the indication "SDM" (see figure "Power supply indicators" in paragraph "Repair Tips"). Activation can be performed in all modes, except when the set has a problem with the Stand-by microprocessor.
- Use the DST-emulation feature of ComPair.
- Use the "DEFAULT" button on the Dealer Service Tool (RC7150).

After activating this mode, "SDM" will appear in the upper right corner of the screen.

How to navigate
When you press the "MENU" button on the RC transmitter, the set will toggle between the SDM and the normal user menu (with the SDM mode still active in the background).

How to exit SDM
Use one of the following methods:
- Switch the set to STAND-BY via the RC-transmitter.
- It is possible that in some SW older versions this method does **NOT** work. To check this, do the following:
  - Activate SDM
  - Switch TV to stand-by
  - Switch TV back on (now you will note that SDM is de-activated)
  - Disconnect power cord from mains.
  - Connect power cord again
  - Check if TV starts in SDM. If this is the case you should use the exit method via normal RC, the "00"-sequence.
- Press the "EXIT" button on the DST.
- Via a standard customer RC-transmitter: key in "00"-sequence.

5.2.2 Service Alignment Mode (SAM)

Purpose
- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operation hours.
- To display (or clear) the error code buffer.

Specifications
- Operation hours counter.
- Software version.
- Option settings.
- Error buffer reading and erasing.
- Software alignments.

How to activate SAM
Use one of the following methods:
- Via a standard RC transmitter: key in the code "062596" directly followed by the "OSD [i+]" button. After activating SAM with this method a service warning will appear on the screen, you can continue by pressing any digit key on the RC.
- Use the DST-emulation feature of ComPair.
- Press the ALIGN button on the DST while the set is in the normal operation.
- Shorting the two solder pads on the SSB, with the indication "SAM". Will **NOT** function any more, these pads are still available on the SSB but do not function.

After activating this mode, "SAM" will appear in the upper right corner of the screen.

Contents of SAM:

- **HARDWARE INFO.**
  - **Viper SW Version.** Displays the software version of the VIPER software (main software). (**Example:** TL31E_1.0_01234 = AAAAB_X.Y_NNNNN).
    - **AAAA**= the chassis name (e.g. TL31= FTL3.1).
    - **B**= the region: E= Europe.
    - **X.Y**= the software version, where X is the main version number (different numbers are not compatible with one another) and Y is the sub version number (a higher number is always compatible with a lower number).
    - **NNNNN**= last five digits of 12nc code of the software.
  - **SBY PROC Version.** Displays the software version of the stand-by processor.
  - **Production Code**. Displays the production code of the TV, this is the serial number as printed on the back of the TV set.
- **OPERATION HOURS.** Displays the accumulated total of operation hours (not the stand-by hours). Every time the TV is switched on/off, 0.5 hours is added to the this number.
- **ERRORS.** (Followed by maximal 10 errors). The most recent error is displayed at the upper left (for an error explanation see paragraph "Error Codes").
- **DEFECTIVE MODULE.** Here the module that generates the error is displayed. If there are multiple errors in the buffer, which are not all generated by a single module, there is probably another defect. It will then display the message "UNKNOWN" here.
- **RESET ERROR BUFFER.** When you press the "OK" button, the error buffer is reset.
- **ALIGNMENTS.** This will activate the "ALIGNMENTS" sub-menu.
- **DEALER OPTIONS.** Extra features for the dealers.
- **OPTIONS.** Extra features for Service.
- **INITIALISE NVM.** When an NVM was corrupted (or replaced) in the former EM3 chassis, the microprocessor replaces the content with default data (to assure that the set can operate). However, all pre-sets and alignment values are gone now, and option numbers are not correct. Therefore, this was a very drastic way. In this chassis, the procedure is implemented in another way: The moment the processor recognises a corrupted NVM, the "initialise NVM" line will be highlighted. Now, you can do two things (dependent of the service instructions at that moment):
  - Save the content of the NVM via ComPair for development analysis, **before** initialising. This will give the Philips Service department an extra possibility for diagnosis (e.g. when Development asks for this).
  - Initialise the NVM (same as in the past, however now it happens conscious).
- **STORE.** All options and alignments are stored when pressing the "OK"-button
- **FUNCTIONAL TEST.** All devices are tested via the "OK" button. Eventual errors are displayed in the error buffer. The error buffer is not erased, the content returns when this test is terminated. It is possible that with some software versions, this function does not function. It is strongly advice to check for errors by switching the TV on and off.
- **SW MAINTENANCE.**
  - **SW Events.** Not useful for service purposes. In case of specific software problems, the development department can ask for this info.
  - **HW Events.** Not functional at the moment this manual is released, description will be published in an update manual if the function becomes available.

How to navigate

- In SAM, you can select the menu items with the "CURSOR UP/DOWN" key on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the "CURSOR UP/DOWN" key to display the next/previous menu items.
- With the "CURSOR LEFT/RIGHT" keys, it is possible to:
  - (De) activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected sub menu.

How to exit SAM

Use one of the following methods:

- Press the "MENU" button on the RC-transmitter, or
- Switch the set to STAND-BY via the RC-transmitter, or
- Press the "EXIT" button on the DST.

5.2.3 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer. The service technician can then ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severity of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.
The CSM is a read only mode; therefore, modifications in this mode are not possible.

How to activate CSM

Key in the code "**123654**" via the standard RC transmitter.

Note: Activation of the CSM is only possible if there is no (user) menu on the screen!

How to navigate

By means of the "CURSOR-DOWN/UP" knob on the RC-transmitter, you can navigate through the menus.

Contents of CSM

CUSTOMER SERVICE MENU 1

- **SOFTWARE VERSION (example: TL31EU_1.0_01234).** Displays the built-in software version. In case of field problems related to software, software can be upgraded. You will find details of the software versions in the chapter "Software Survey" of the "Product Survey - Colour Television" publication. This publication is generated four times a year. As this software is consumer upgradable, it will also be published on the Internet.
- **SET TYPE.** This information is very helpful for a help desk/workshop as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of the TV-set.
- **Production Code.** Displays the production code of the TV.
- **CODE 1.** Gives the latest five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occurred error is displayed on the leftmost position. Each error code is displayed as a 2-digit number. When less than 10 errors occur, the rest of the buffer is empty (00). See also paragraph Error Codes for a description.
- **CODE 2.** Gives the first five errors of the error buffer. See also paragraph Error Codes for a description.
- **VOLUME.** Gives the last status of the volume as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Volume values can be changed via the volume key on the RC-transmitter.
- **BRIGHTNESS.** Gives the last status of the brightness as set by the customer. The value can vary from 0 (brightness is minimum) to 100 (brightness is maximum). Brightness values can be changed via the "CURSOR LEFT" and

"CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "BRIGHTNESS".

- **CONTRAST.** Gives the last status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 100 (contrast is maximum). Contrast values can be changed via "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "CONTRAST".
- **COLOUR.** Gives the last status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 100 (colour is maximum). Colour values can be changed via "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "COLOUR".
- **HUE.** Only relevant for NTSC-signals (e.g. some NTSC-DVD-discs).

CUSTOMER SERVICE MENU 2

- **SHARPNESS.** Gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum). In case of bad antenna signals, a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "SHARPNESS".
- **HEADPHONE VOLUME.** Gives the last status of the head phone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Head phone volume values can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "SOUND" and "HEADPHONE VOLUME".
- **DOLBY.** Indicates whether the received transmitter transmits Dolby sound ("ON") or not ("OFF"). Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is received without a Dolby Signalling bit, this indicator will show "OFF" even though a Dolby transmission is received.
- **SURROUND MODE.** Indicates the by the customer selected surround mode (or automatically chosen mode). Possible values are "OFF", "INCREDIBLE SURROUND" OR "DOLBY VIRTUAL". These settings can be influenced after pressing the "MENU" button and selecting "SOUND" and SURROUND MODE". It can also have been selected automatically by signalling bits (internal software).
- **TUNER FREQUENCY.** Indicates the frequency the selected transmitter is tuned to. The tuner frequency can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys for fine tune after opening the installation menu and selecting "INSTALL" and "MANUAL INSTALL".
- **DIGITAL OPTION.** Gives the selected digital mode, "PROGRESSIVE SCAN", "MOVIE PLUS" or "PIXEL PLUS". Change via "MENU", "PICTURE", "DIGITAL OPTIONS".
- **TV SYSTEM.** Gives information about the video system of the selected transmitter.
  - West Europe
  - East Europe
  - UK

CUSTOMER SERVICE MENU 3

- **BALANCE.** Indicates the balance settings, between "-50" and "+50". Change via "MENU", "SOUND", and "BALANCE".
- **CENTRE MODE.** Not applicable.
- **DNR.** Gives the selected DNR setting (Dynamic Noise Reduction), "OFF", "MINIMUM", "MEDIUM", or "MAXIMUM". Change via "MENU", "PICTURE", "DNR"
- **NOISE FIGURE.** Gives the noise ratio for the selected transmitter. This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal). For some software versions, the noise figure will only be valid when "Active Control" is set to "medium" or "maximum" before activating CSM.
- **SOURCE.** Indicates which sourcehe is used and the video/ audio signal quality of the selected source. (Example: Tuner, Video/NICAM) Source: "TUNER", "EXT1", "EXT2", "EXT3", "EXT4", "SIDE", "AV1", "AV2", "AV3" or "AV4". Video signal quality: "VIDEO", "S-VIDEO", "RGB 1FH", "YPBPR 1FH 480P", "YPBPR 1FH 576P", "YPBPR 1FH 1080I", "YPBPR 2FH 480P", "YPBPR 2FH 576P", "YPBPR 2FH 1080I", "RGB 2FH 480P", "RGB 2FH 576P" or "RGB 2FH 1080I". Audio signal quality: "STEREO", "SPDIF 1", "SPDIF 2", or "SPDIF".
- **AUDIO SYSTEM.** Gives information about the audible audio system: Analogue in: no dig audio", "not supported dig audio", "stereo", "mono", "mono selected", "dual I", "dual II", "NICAM stereo", "NICAM mono", "NICAM dual I", "NICAM dual II", "NICAM available", "Dolby digital x/y" (x/y must be replaced by numerals depending on the signal type), "Dolby digital dual I", "Dolby digital dual II", "digital stereo", "dual I", "dual II", "MPEG 2/0", "DVD virtual surround".
- **TUNED BIT.** Gives information about the tuning method of the stored pre-set. If a channel is found via "automatic installation", you will see the value "YES". When you change this (automatically found) frequency via "fine tune" adjustment (installation menu - manual installation), the displayed value will change to "NO". Therefore, when you see the value "NO" in this line, it is an indication that the received channel is a non-standard signal (e.g. of a VCR).
- **SURROUND SPEAKERS.** Not applicable in this set.
- **ON TIMER.** Indicates if the "On Timer" is set "ON" or "OFF" and if the timer is "ON" also displays start time, start day and program number. Change via "MENU", "TV", "FEATURES", and "ON TIMER".
- **PRESET LOCK.** Indicates if the selected preset has a child lock: "LOCKED" or "UNLOCKED". Change via "MENU", "TV", "FEATURES", "CHILD LOCK", and "CUSTOM LOCK".

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- **CHILD LOCK.** Indicates the last status of the general child lock: "UNLOCK", "LOCK", or "CUSTOM LOCK". Change via "MENU", "TV", "FEATURES", "CHILD LOCK", and "LOCK".
- **LOCK AFTER.** Indicates at what time the child lock is set: "OFF" or e.g. "18:45" (lock time). This is only displayed if child lock is set to "CUSTOM LOCK"
- **PROGRAM CATEGORY.** This is an EPG feature and not applicable for this chassis.

CUSTOMER SERVICE MENU 5

- **OPTIONS 1.** Gives the option codes of option group 1 as set in SAM (Service Alignment Mode).
- **OPTIONS 2.** Gives the option codes of option group 2 as set in SAM (Service Alignment Mode).
- **AVL.** Indicates the last status of AVL (Automatic Volume Level): "ON" or "OFF". Change via "MENU", "TV", "SOUND", "AVL"
- **DELTA VOLUME.** Indicates the last status of the delta volume for the selected preset as set by the customer: from "-12" to "+12". Change via "MENU", "TV", "SOUND", "DELTA VOLUME".

How to exit CSM

Use one of the following methods:

- After you press a key on the RC-transmitter (with exception of the "CHANNEL +/-", "VOLUME" and digit (0-9) keys), or
- After you switch the TV-set "OFF" with the mains switch.

5.3 Stepwise Start-up

The stepwise start-up method, as known from the EM sets is not valid any more. Because there are only three steps, and all protections occur before the 2nd step, the "old" method was not useful any more.
The situation for this chassis is as follows: when the TV is in a protection state (and thus blinking an error) **and** SDM is activated via shortcutting the pins on the SSB, the TV starts up until it reaches the situation just before protection. So, this is a kind of automatic stepwise start-up. In combination with the start-up diagrams at the end of this chapter (see flow chart figures), you can see which supplies are present at which state.

The abbreviations SP and MP are standing for:
- **SP:** protection or error detected by the **S**tand-by **P**rocessor.
- **MP:** protection or error detected by the Viper **M**ain **P**rocessor.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:
- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I^2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the Force/SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial (or RS-232) cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector(s).

The ComPair fault finding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:
- Automatic (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I^2C/UART level. ComPair can access the I^2C/UART bus of the television. ComPair can send and receive I^2C/UART commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I^2C/UART busses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the fault finding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the fault finding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some **additional features** like:
- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and Force/SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Mono-carrier.*
  - Click on the "Panel" hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the "Schematic" hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 How To Connect

This is described in the chassis fault finding database in ComPair.

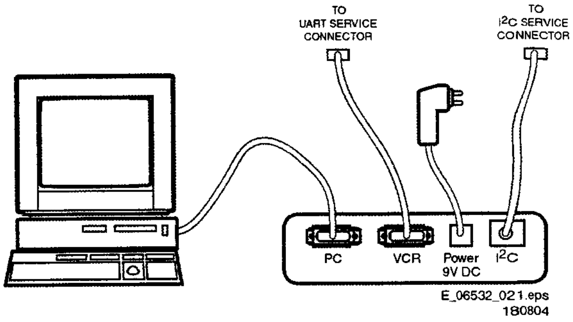


Figure 5-1 ComPair interface connection

5.4.4 How To Order

ComPair order codes (EU/AP/LATAM):
- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excluding transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002, 3122 785 60110 (year 2003).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003), 3122 785 60130 (year 2004).
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer (non-UK): 4822 727 21632.
- Transformer UK: 4822 727 21633.
- ComPair UART interface cable: 3122 785 90630

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

5.5.1 Introduction

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to

right, new errors are logged at the left side, and all other errors shift one position to the right.
When an error has occurred, the error is added to the list of errors, provided the list is not full or the error is a protection error.
When an error occurs and the error buffer is full, then the new error is not added, and the error buffer stays intact (history is maintained), except when the error is a protection error.
To prevent that an occasional error stays in the list forever, the error is removed from the list after 50+ operation hours.
When multiple errors occur (errors occurred within a short time span), there is a high probability that there is some relation between them.

5.5.2 How to read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only if you have a picture). Examples:
  - **00 00 00 00 00**: No errors detected
  - **06 00 00 00 00**: Error code 6 is the last and only detected error
  - **09 06 00 00 00**: Error code 6 was first detected and error code 9 is the last detected error
- Via the blinking LED procedure (when you have no picture). See next paragraph.
- Via ComPair.

5.5.3 How to clear the Error Buffer

Use one of the following methods:

- By activation of the "RESET ERROR BUFFER" command in the SAM menu.
- With a normal RC, key in sequence "MUTE" followed by **"062599"** and "OK".
- When you transmit the commands "DIAGNOSE" - "99" - "OK" with ComPair (or with a DST).
- If the content of the error buffer has not changed for 50+ hours, it resets automatically.

5.5.4 Error Codes

In case of non-intermittent faults, clear the error buffer before you begin the repair. This to ensure that old error codes are no longer present. Before clearing the buffer, write down the content, as this history can give you significant information.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).
There are several mechanisms of error detection:

- Via error bits in the status registers of ICs (not used in this chassis).
- Via polling on I/O pins going to the Stand-by microprocessor.
- Via sensing of analogue values on the Stand-by microprocessor (ADC).
- Via a "not acknowledge" state of an I^2C IC-communication.

The errors can be divided into two blocks:

- **Errors detected via the stand-by processor (stand-by software):** Errors detected via the stand-by processor cause a protection. These errors are NOT logged but blinked via the front led. You do not have to start the blinking LED procedure manually; it starts automatic when a protection occurs.
- **Errors detected via the Viper (main software):** Errors detected via the Viper do not cause a protection; these errors are logged in the error buffer.

Table 5-1 Error code overview

Error	Device	Description	Defective Module	Expected result
5	PNX8550	Viper doesn't boot	Control	Protection + error 5 blinks
6	n.a.	5V supply	+5V Supply	Protection + error 6 blinks
7	n.a.	8V6 supply	+8V Supply	Protection + error 7 blinks
8	n.a.	1.2V DC/DC	+1V2 Supply	Protection + error 8 blinks
9	n.a.	2.5V DC/DC	+2V5 Supply	Protection + error 9 blinks
11	n.a.	3.3V DC/DC	+3V3 Supply	Protection + error 11 blinks
12	n.a.	12V supply	+12V Supply	Protection + error 12 blinks
13	n.a.	Audio Supply	Audio Supply	Protection + error 13 blinks
14	n.a.	Class D	Class D Supply	Protection + error 14 blinks
15	PNX3000	MPIF1 POR not available	IF IO	Error 15 logged
17	PNX3000	MPIF1 audio supply (ASUP)	IF IO	Error 17 logged
18	PNX3000	MPIF1 ref. freq. (ROK)	IF IO	Error 18 logged
25	n.a.	Supply Fault	DC-DC Supply	Protection + error 25 blinks
29	PNX2000	AVIP1	AV Input Processor	Error 29 logged
32	PNX3000	MPIF1	Analog Front End 1	Error 32 logged
34	UV1318/TEDH700A	Tuner1	Tuner 1	Error 34 logged
38	PCA9555	I/O expander audio	Audio IO expander	Error 38 logged
43	TDA8751	Hi Rate Front End	HDMI	Error 43 logged
44	M24C32	Main NVM	NVM	Error 44 blinks
45	T6TU5XB	Columbus 1	Comb filter	Error 45 logged

5.6 The Blinking LED Procedure

5.6.1 Introduction

The blinking LED procedure can be split up into two situations:

- Blinking LED procedure in case of protection. In case the TV gets in a protection state, the error is automatically blinked. This will be only one error, namely the one that's causing the protection. Therefore, you do not have to do anything special, just read out the blinks. Long blink indicates the decimal digit, short blink indicates the units.
- Blinking LED procedure in the "on" state. Via this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful for fault finding, when there is no picture.

When the blinking LED procedure is activated in the "ON" state, the front LED will show (blink) the contents of the error-buffer. Error-codes > 10 are shown as follows:

1. A long blink of 750 ms (which is an indication of the decimal digit),
2. A pause of 1.5 s,
3. "n" short blinks (where "n"= 1 - 9),
4. When all the error-codes are displayed, the sequence finishes with a LED blink of 3 s,
5. The sequence starts again.

Example: Error 12 9 6 0 0.
After activation of the SDM, the front LED will show:

1. 1 long blink of 750 ms (which is an indication of the decimal digit) followed by a pause of 1.5 s,
2. 2 short blinks of 250 ms followed by a pause of 3 s,
3. 9 short blinks followed by a pause of 3 s,
4. 6 short blinks followed by a pause of 3 s,
5. 1 long blink of 3 s to finish the sequence,
6. The sequence starts again.

5.6.2 How to Activate

Use one of the following methods:

- Activate the SDM (only via soldering pads marked "SDM" on SSB). The blinking front LED will show the entire contents of the error buffer (this works in "normal operation" mode).
- Transmit the commands "MUTE" - **"062500"** - "OK" with a normal RC. The complete error buffer is shown. Take notice that it takes some seconds before the blinking LED starts.
- Transmit the commands "MUTE" - **"06250x"** - "OK" with a normal RC (where "x" is a number between 1 and 5). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... Take notice that it takes some seconds before the blinking LED starts.
- "DIAGNOSE X" with the DST (where "x" is a number between 1 and 9). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... When x= 0 all errors are shown.

5.7 Protections

Most of the protections and errors use either the Stand-by microprocessor or the Viper controller as detection mechanism. Since in these cases, checking of observers, polling of ADCs, and filtering of input values are all heavily software based, these protections are referred to as "software protections".
There are several types of software related protections, solving a variety of fault conditions:

- **Protections related to supplies:** check of the 12V, +5V, +8V6, +1.2V, +2.5V and +3.3V.
- **Protections related to breakdown of the safety check mechanism.** E.g. since a lot of protection detections are done by means of the Viper, failing of the Viper communication will have to initiate a protection mode since safety cannot be guaranteed any more.

These protections use various mechanisms of detection:

- Via error bits in the status registers of ICs (not used in this chassis).
- Via polling on I/O pins going to the Stand-by microprocessor.
- Via sensing of analogue values on the Stand-by microprocessor (ADC).
- Via a "not acknowledge" state of an I^2C IC-communication.

Remark on both Protect-Audio and Audio-Supply-Prot:
The monitoring of these observers should only start 1 s after switching "on" the audio supply (enabling main supply through STAND-BY line toggling, see start-up description) because some peak currents could be drawn out of the supply during start-up falsely indicating a protection situation.

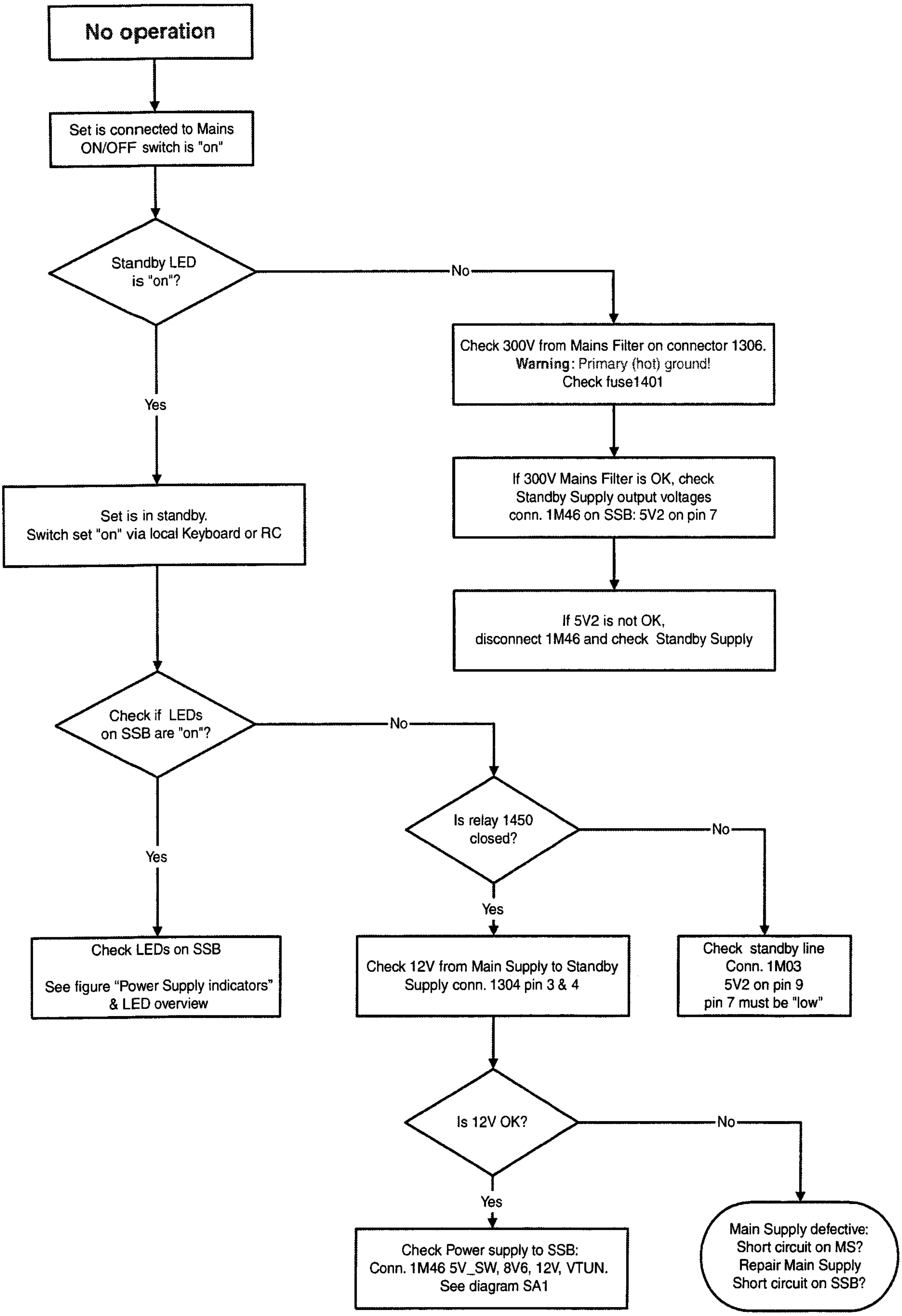
Remark on the supply errors:
The detection of a supply dip or supply loss during the normal playing of the set does not lead to a protection, but to a cold reboot of the set.

Protections during start-up of the set.
During start-up of the set some voltages and IC observers are actively monitored, to be able to optimise the start-up speed and to assure good operation of all components. If these monitors do not respond in a defined way, this indicates a malfunction of the system and leads to a protection.

Overview of the start-up protections:

- Nominal level detection of the +1.2V, +2.5V, +3.3V, +5V, +8.6V, and +12V.
- Viper does not boot.

5.8 Repair Tips


No operation
Set is connected to Mains ON/OFF switch is "on"
Standby LED is "on"?
No
Yes
Check 300V from Mains Filter on connector 1306. Warning: Primary (hot) ground! Check fuse1401
If 300V Mains Filter is OK, check Standby Supply output voltages conn. 1M46 on SSB: 5V2 on pin 7
If 5V2 is not OK, disconnect 1M46 and check Standby Supply
Set is in standby. Switch set "on" via local Keyboard or RC
Check if LEDs on SSB are "on"?
No
Yes
Check LEDs on SSB See figure "Power Supply indicators" & LED overview
Is relay 1450 closed?
No
Yes
Check 12V from Main Supply to Standby Supply conn. 1304 pin 3 & 4
Check standby line Conn. 1M03 5V2 on pin 9 pin 7 must be "low"
Is 12V OK?
No
Yes
Check Power supply to SSB: Conn. 1M46 5V_SW, 8V6, 12V, VTUN. See diagram SA1
Main Supply defective: Short circuit on MS? Repair Main Supply Short circuit on SSB?

E_14700_067.eps
121104

Figure 5-2 First line fault find tree

5.8.1 Power Supply

The LEDs on the SSB show the presence/absence of several voltages (see also figure “Power supply indicators”)

Table 5-2 LED overview

LED	Detected Voltage	Diagr.	Remarks
6G06	+5VDisp	B9D	Switches "on" when the display is activated.
6H00	Reset MIPS	B6A	This line is active "low" during start-up (LED="off"). After start-up conditions are met, the LED switches "on".
6T06	Visual check	B3	Switches "off" in case of SECAM L/L' reception (this line selects the correct SAW filter).
6T07	VTUN1	B3	Indicates if the 33 V tuner voltage is present.
6U19	+V5D	B1	Indicates if the 5VD voltage is present.
6U20	+3V3	B1	Indicates if the 3V3 voltage is present.
6U21	+2V5	B1	Indicates if the 2V5 voltage is present.
6U22	+1V2	B1	Indicates if the 1V2 voltage is present.

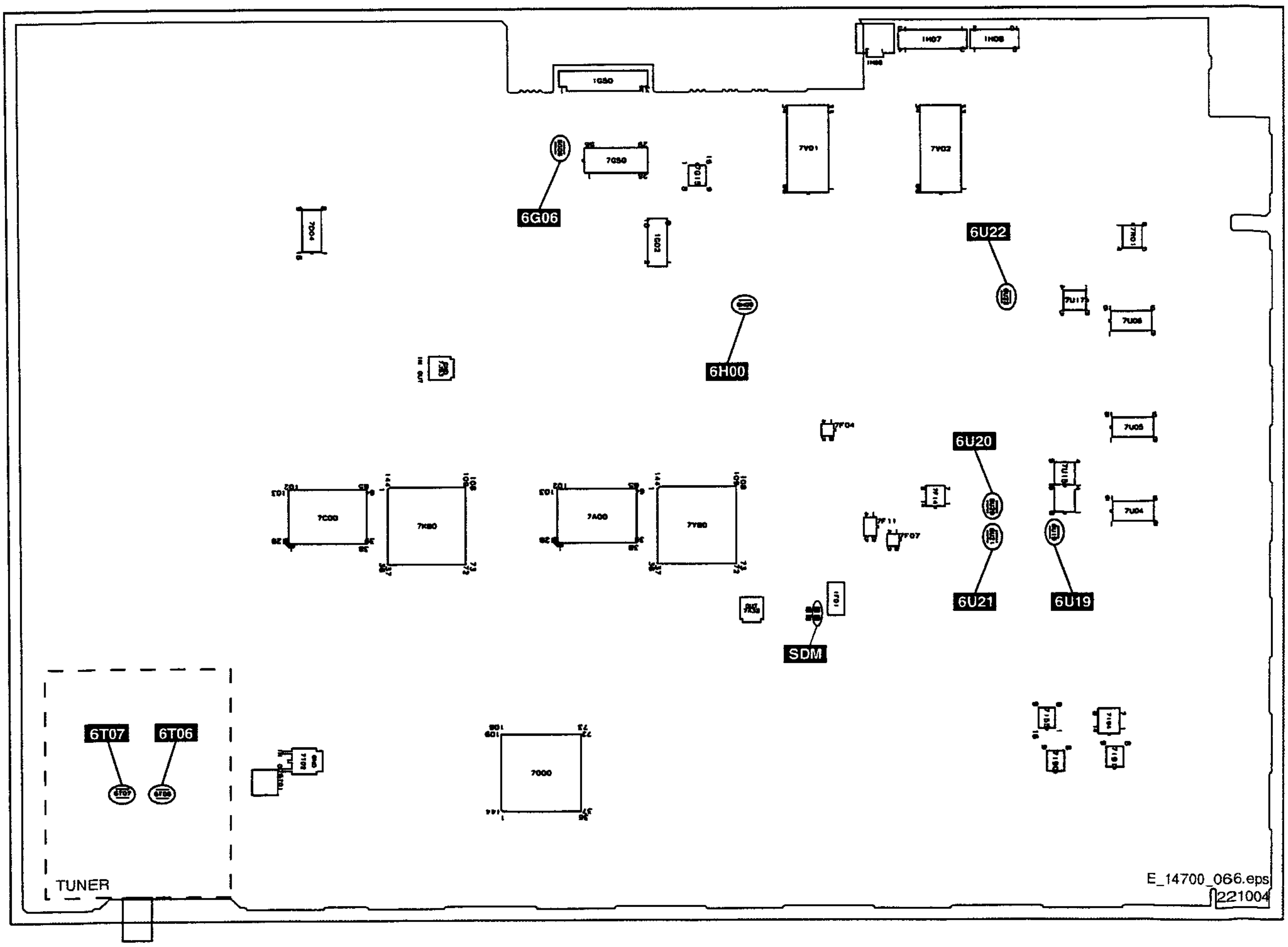


Figure 5-3 Power supply indicators

Brief description of the succession of the supply voltages availability on the SSB:

When (conditions)			Then (should be available)
+5V2= +5.2V			+2V5D (to supply DDRAM)
+12VS= +12V **+5V2**= +5.2V	12V_SWITCH=low and +5V=5V		+12VSW
		ENABLE-1V2= low	+1V2
		ENABLE-2V5= low	+2V5 & +2V8
		ENABLE-3V3= low	+3V3
		All enabled	SUPPLY_FAULT = high

In case of a wrong value of the output voltages (or no output voltages) check:

- The value of signals 12V_SWITCH, ENABLE_1V2, ENABLE_2V5, ENABLE_3V3 and SUPPLY_FAULT and the availability of +5V.
- The value of +12VSW and the supply voltages for the IC controllers (pin 9, about +12 V).
- The switching frequency (250 kHz) and duty cycle of each DC/DC converter.
- Short-circuits to GND of output voltages.
- Missing or incorrect value of components.

The values of the supply voltages and their ramp-up times:

Name	Value and tolerance	Ramp-up time
+1V2	1.26 V ±4%	6 ms ±3 ms
+2V5	2.6 V ±5%	4 ms ±2 ms
+2V5D	2.6 V ±5%	4 ms ±2 ms
+2V8	2.95 V ±10%	4 ms ±2 ms
+3V3	3.38 V ±5%	4 ms ±2 ms

5.8.2 MPIF

Important things to make the MPIF work:

- Supply of 5 V.
- Clock signal of 13.5 MHz from the AVIP.
- I^2C from the VIPER.

5.8.3 AVIP

Important things to make AVIP operational.

- Supply 1.8 V and 3.3 V for video.
- Supply 3V3-AUD, 5V-AUD, and 8V-AUD for audio.
- Reset pulse (RESET_MIPS) from VIPER (visible via LED 6H00).
- Clock 13.5 MHz from VIPER.
- I^2C from VIPER.

5.9 Software Upgrading

In this chassis, you can **upgrade** the main software via a USB stick or memory card.

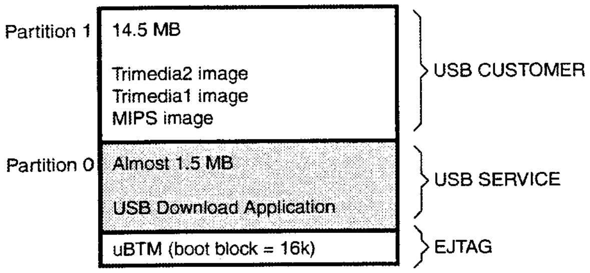
5.9.1 Introduction

It is possible **for the user** to upgrade the **main** software via the USB port. This allows replacement of a software image in a standalone set, without the need of an E-JTAG debugger. A description on how to upgrade the software can be found in chapter 3 "Directions For Use".

The set software is stored in a 128 Mbit (16 MB) NAND-Flash, which is connected to the VIPER via the PCI bus.
The NAND-Flash used is a TC58DVM72F1TG10. It is a serial-type memory device, which utilises the I/O pins for both address and data input/output as well as for command inputs. The Erase and Program operations are automatically executed. To access the data in the NAND-flash, three Octal Bus Transceiver circuits are used (74LVC245).

5.9.2 Procedure

The software image resides in the NAND-Flash, and is formatted in the following way:



E_14700_082.eps
091104

Figure 5-4 NAND-Flash format

Executables are stored as files in a file system. The boot loader (uBTM) will load the USB Download Application in partition 0 (USB drivers, bootscript, etc). This application makes it then possible to upgrade the main software via USB.

Software can be upgraded in two ways:
- Via the USB port.
- Via an external EJTAG tool.

Installing "Partition 0" software is possible via an external EJTAG tool, but also in a special way with the USB stick (see description in paragraph "Manual Start of Software Upgrade Application").

Programming of an **empty** NAND-Flash is only possible via an external EJTAG tool.

Software upgrade via USB
To do a software upgrade (partition 1) via USB, the set must be operational, and the "Partition 0" files for the VIPER **must** be installed in the NAND-Flash!

The new software can be uploaded to the TV by using a portable memory device or USB storage compliant devices (e.g. USB memory stick). You can download the new software from the Philips website to your PC.

Partition 0
To upgrade the USB download application (partition 0 except the bootblock), insert an USB stick with the correct software, but press the "red" button on the remote control (in "TV" mode) when it is asked via the on screen text.

Caution:
- The USB download application will now erase **both** partitions (except the boot block), so you need to reload the main SW after upgrading the USB download application. As long as this is not done, the USB download application will start when the set is switched "on".
- When something goes wrong during the progress of this method (e.g. voltage dip or corrupted software file), the set will not start up, and can only be recovered via the EJTAG tool!

Software upgrade via EJTAG
If the "Partition 0" software is corrupted or in case of a new (empty) NAND-Flash, the "Partition 0" software needs to be installed.
This is possible in dedicated workshops with special tools like the EJTAG probe with software, or via the procedure described below.

5.9.3 Manual Start of Software Upgrade Application

Partition 1
It is possible to **force** the TV into the software upgrade application, but normally this is not needed, as the TV will automatically detect when a memory device with upgrade software is connected.
To force the TV into the software upgrade mode:
- Disconnect the TV from the mains.
- Press the "OK" button on a Philips DVD RC-6 remote control (it is also possible to use the TV remote in "DVD" mode).
- Keep the "OK" button pressed while connecting the TV to the mains.
- The software upgrade application will start.
- When a memory device with upgrade software is connected, the upgrade process will start.

5.10 Start-up flow charts

In the following flow charts, the start-up behaviour of the chassis is described.

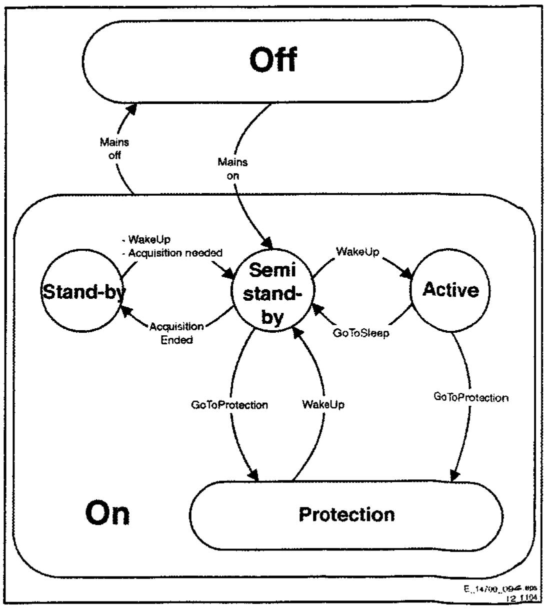
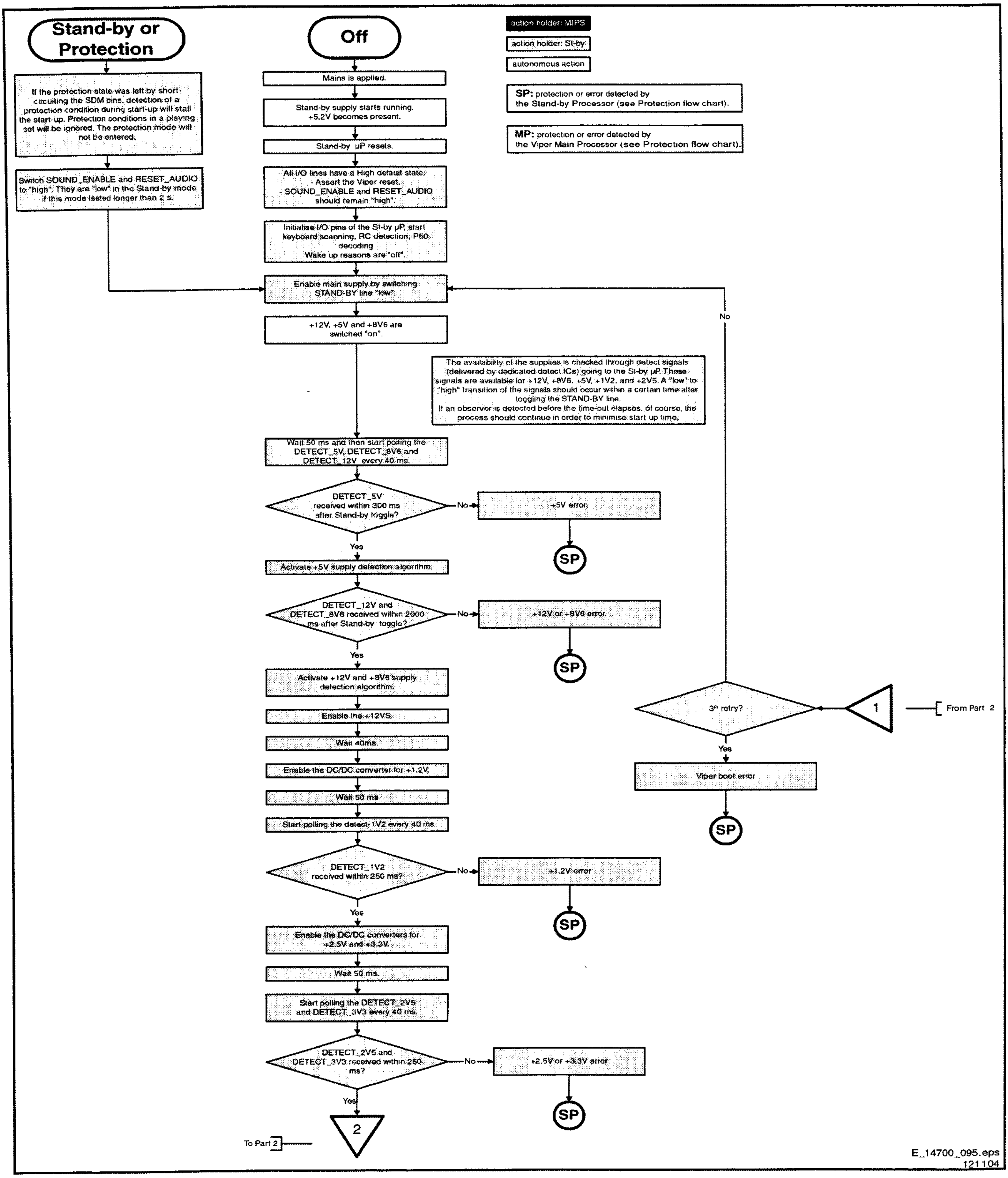


Figure 5-5 Transition diagram


Stand-by or Protection
Off
action holder: MIPS
action holder: St-by
autonomous action
Mains is applied.
Stand-by supply starts running. +5.2V becomes present.
Stand-by µP resets.
All I/O lines have a High default state: - Assert the Viper reset. - SOUND_ENABLE and RESET_AUDIO should remain "high".
Initialise I/O pins of the St-by µP, start keyboard scanning, RC detection, P50 decoding Wake up reasons are "off".
Switch SOUND_ENABLE and RESET_AUDIO to "high". They are "low" in the Stand-by mode if this mode lasted longer than 2 s.
Enable main supply by switching STAND-BY line "low".
No
+12V, +5V and +8V6 are switched "on".
Wait 50 ms and then start polling the DETECT_5V, DETECT_8V6 and DETECT_12V every 40 ms.
DETECT_5V received within 300 ms after Stand-by toggle?
No
+5V error.
SP
Yes
Activate +5V supply detection algorithm.
DETECT_12V and DETECT_8V6 received within 2000 ms after Stand-by toggle?
No
+12V or +8V6 error.
SP
Yes
Activate +12V and +8V6 supply detection algorithm.
Enable the +12VS.
Wait 40ms.
Enable the DC/DC converter for +1.2V.
Wait 50 ms
Start polling the detect-1V2 every 40 ms
3th retry?
1
From Part 2
Yes
Viper boot error
SP
DETECT_1V2 received within 250 ms?
No
+1.2V error
SP
Yes
Enable the DC/DC converters for +2.5V and +3.3V.
Wait 50 ms.
Start polling the DETECT_2V5 and DETECT_3V3 every 40 ms.
DETECT_2V5 and DETECT_3V3 received within 250 ms?
No
+2.5V or +3.3V error
SP
Yes
2
To Part 2

If the protection state was left by short circuiting the SDM pins, detection of a protection condition during start-up will stall the start-up. Protection conditions in a playing set will be ignored. The protection mode will not be entered.

SP: protection or error detected by the Stand-by Processor (see Protection flow chart).

MP: protection or error detected by the Viper Main Processor (see Protection flow chart).

The availability of the supplies is checked through detect signals (delivered by dedicated detect ICs) going to the St-by µP. These signals are available for +12V, +8V6, +5V, +1V2, and +2V5. A "low" to "high" transition of the signals should occur within a certain time after toggling the STAND-BY line.
If an observer is detected before the time-out elapses, of course, the process should continue in order to minimise start up time.

E_14700_095.eps
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Figure 5-6 "Off" to "Semi Stand-by" flow chart (part 1)

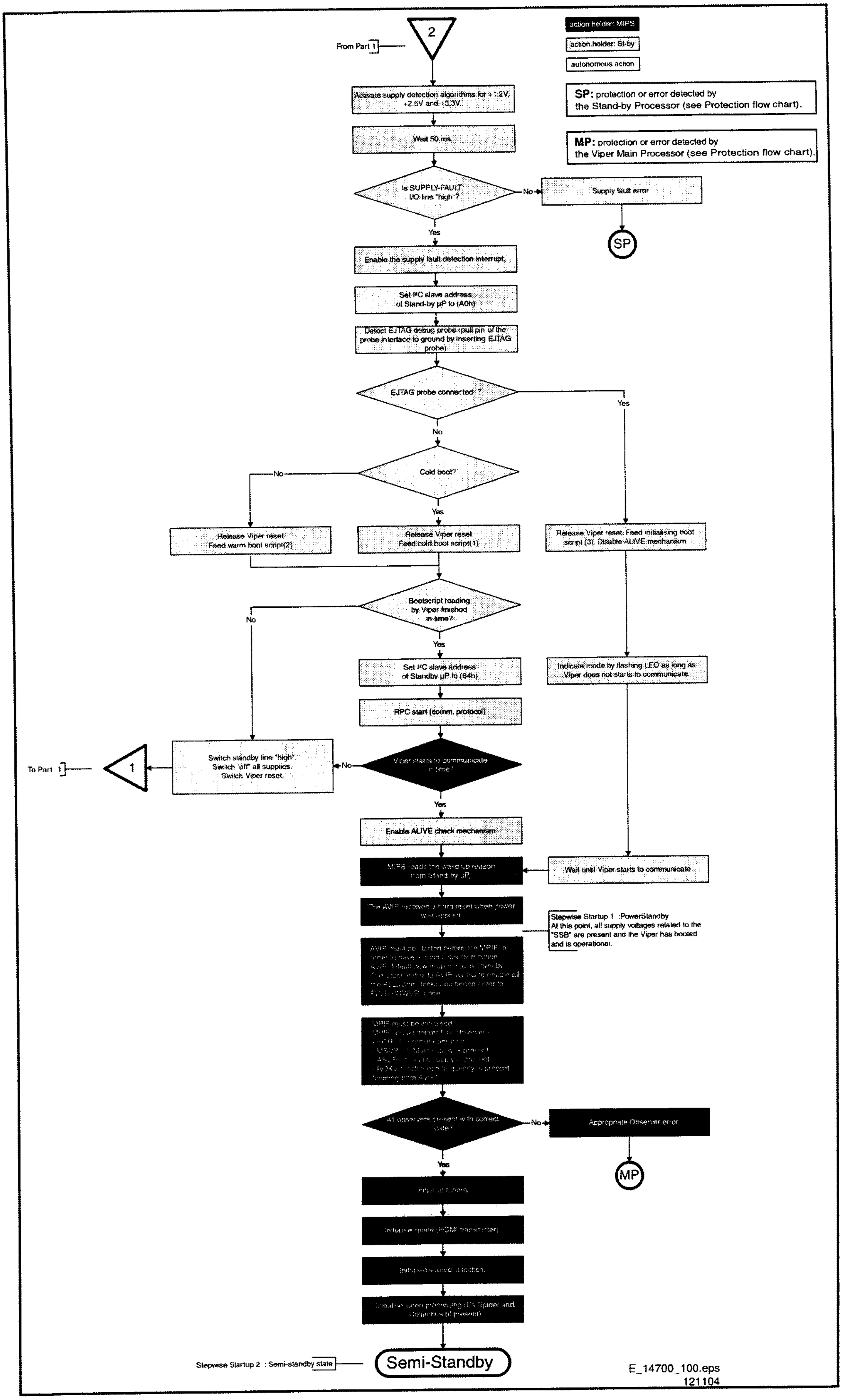
From Part 1
2
action holder: MIPS
action holder: St-by
autonomous action
SP: protection or error detected by the Stand-by Processor (see Protection flow chart).
MP: protection or error detected by the Viper Main Processor (see Protection flow chart).
Activate supply detection algorithms for +1.2V, +2.5V and +3.3V.
Wait 50 ms.
Is SUPPLY-FAULT I/O line "high"?
No
Supply fault error
SP
Yes
Enable the supply fault detection interrupt.
Set I²C slave address of Stand-by µP to (A0h)
Detect EJTAG debug probe (pull pin of the probe interface to ground by inserting EJTAG probe)
EJTAG probe connected ?
Yes
No
Cold boot?
No
Yes
Release Viper reset Feed warm boot script(2)
Release Viper reset Feed cold boot script(1)
Release Viper reset. Feed initialising boot script (3). Disable ALIVE mechanism
Bootscript reading by Viper finished in time?
No
Yes
Set I²C slave address of Standby µP to (64h)
Indicate mode by flashing LED as long as Viper does not starts to communicate.
RPC start (comm. protocol)
To Part 1
1
Switch standby line "high". Switch "off" all supplies. Switch Viper reset.
No
Viper starts to communicate in time?
Yes
Enable ALIVE check mechanism
MIPS reads the wake up reason from Stand-by µP.
Wait until Viper starts to communicate
The AVIP received a hard reset when power was applied
Stepwise Startup 1 :PowerStandby At this point, all supply voltages related to the "SSB" are present and the Viper has booted and is operational.
All observers present with correct state?
No
Appropriate Observer error
MP
Yes
Initialise tuners.
Initialise source (HDMI transmitter)
Initialise source selection.
Initialise video processing ICs Spider and Columbus (if present)
Stepwise Startup 2 : Semi-standby state
Semi-Standby
E_14700_100.eps
121104

Figure 5-7 “Off” to “Semi Stand-by” flow chart (part 2)

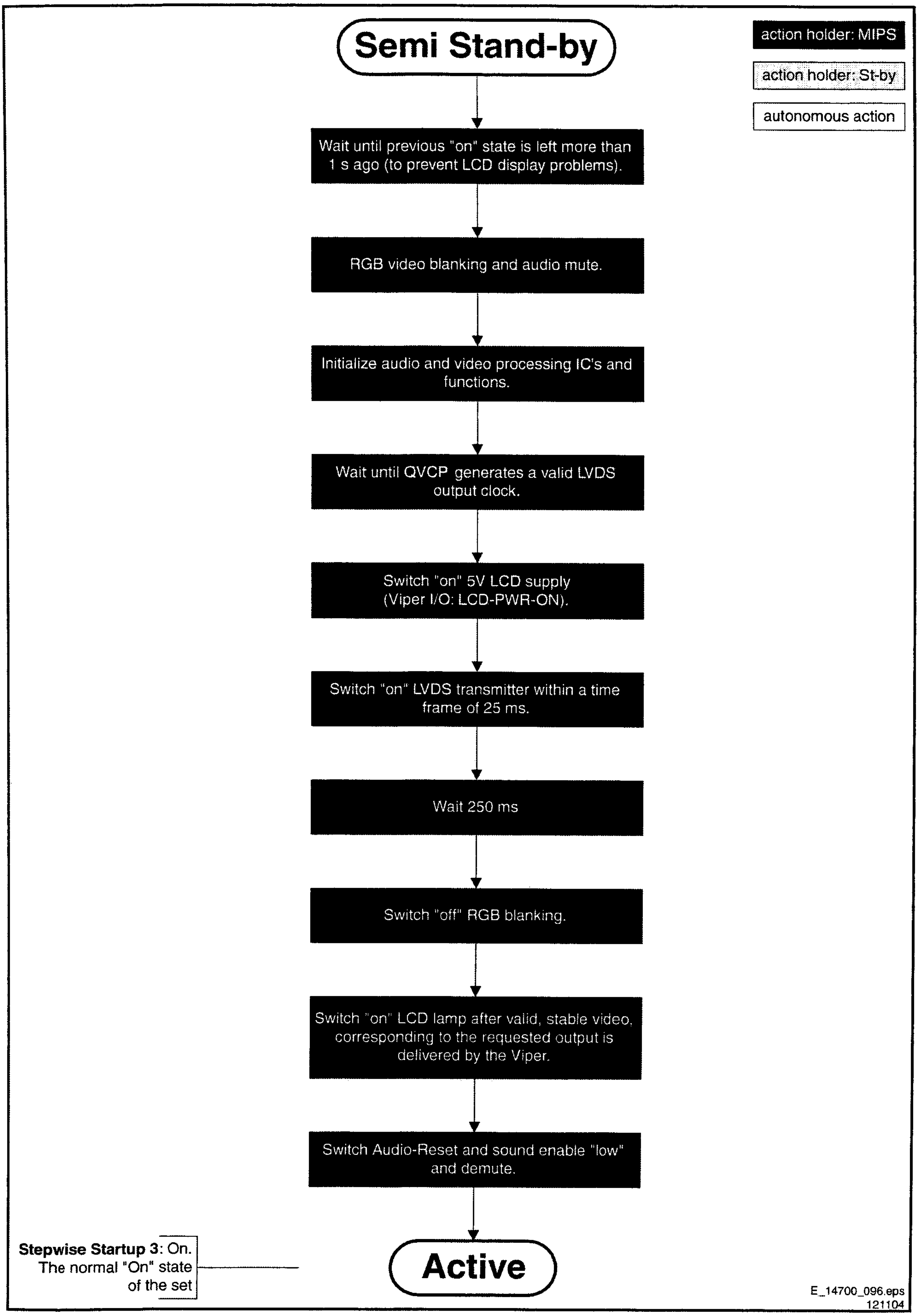
Semi Stand-by
action holder: MIPS
action holder: St-by
autonomous action
Wait until previous "on" state is left more than 1 s ago (to prevent LCD display problems).
RGB video blanking and audio mute.
Initialize audio and video processing IC's and functions.
Wait until QVCP generates a valid LVDS output clock.
Switch "on" 5V LCD supply (Viper I/O: LCD-PWR-ON).
Switch "on" LVDS transmitter within a time frame of 25 ms.
Wait 250 ms
Switch "off" RGB blanking.
Switch "on" LCD lamp after valid, stable video, corresponding to the requested output is delivered by the Viper.
Switch Audio-Reset and sound enable "low" and demute.
Stepwise Startup 3: On. The normal "On" state of the set
Active
E_14700_096.eps
121104

Figure 5-8 “Semi Stand-by” to “Active” flow chart

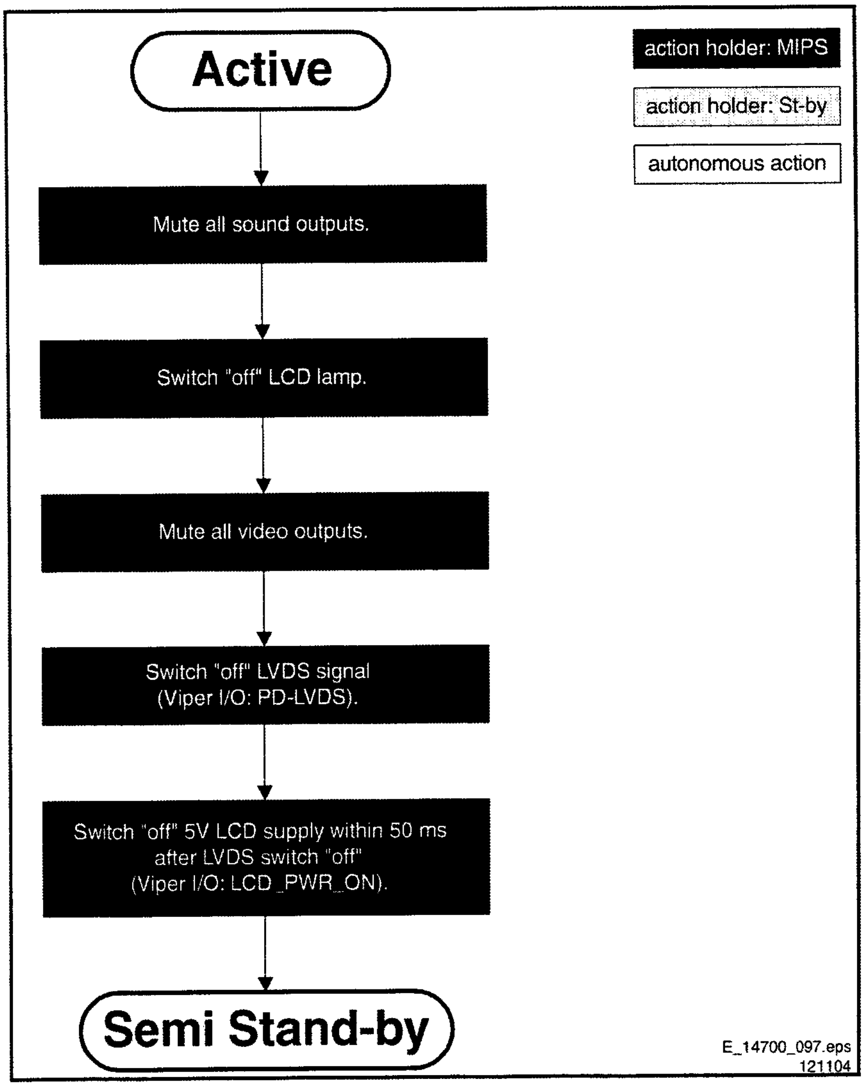
Active
action holder: MIPS
action holder: St-by
autonomous action
Mute all sound outputs.
Switch "off" LCD lamp.
Mute all video outputs.
Switch "off" LVDS signal (Viper I/O: PD-LVDS).
Switch "off" 5V LCD supply within 50 ms after LVDS switch "off" (Viper I/O: LCD_PWR_ON).
Semi Stand-by
E_14700_097.eps
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Figure 5-9 "Active" to "Semi Stand-by" flow chart

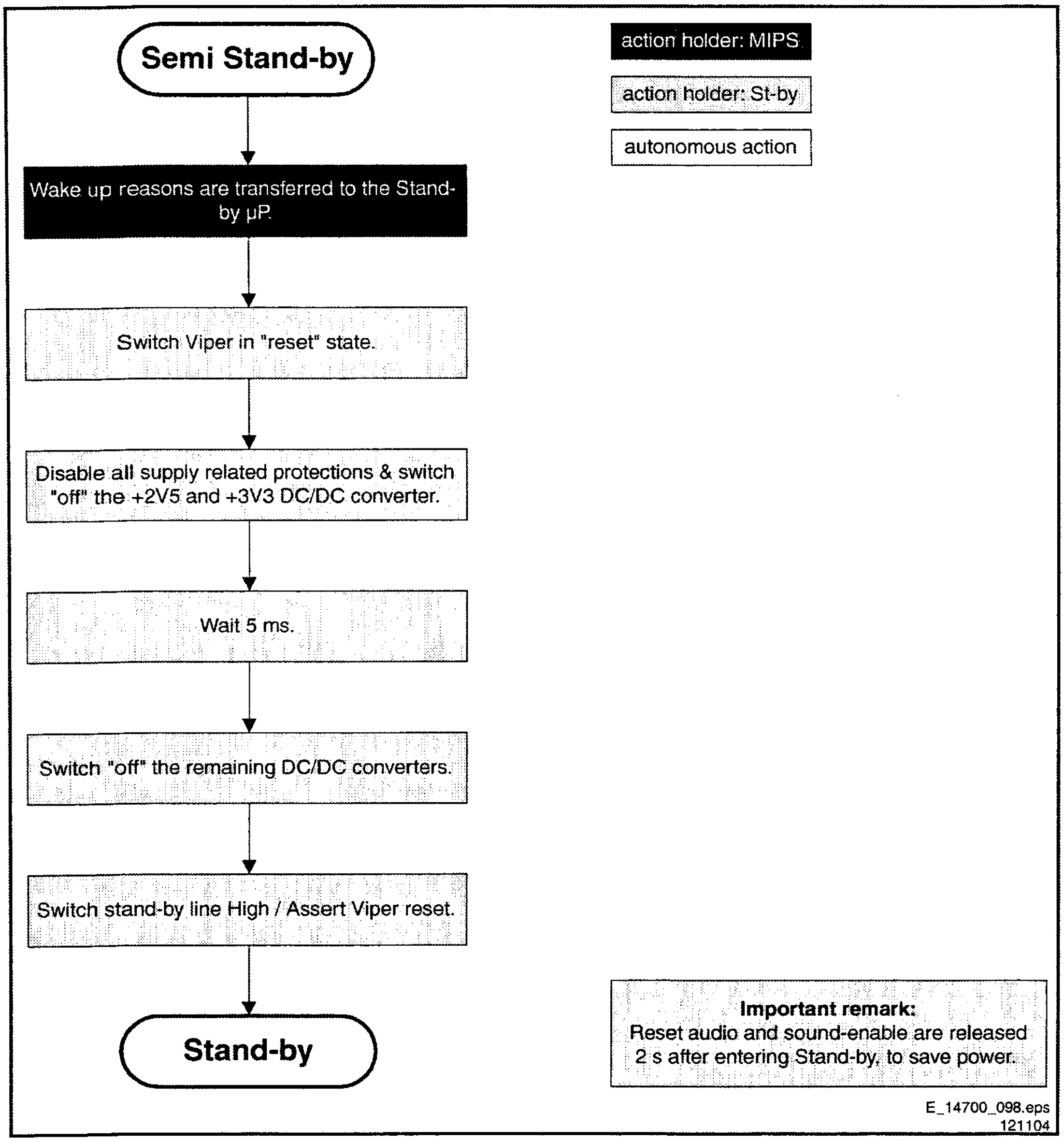
Semi Stand-by
action holder: MIPS
action holder: St-by
autonomous action
Wake up reasons are transferred to the Stand-by µP.
Switch Viper in "reset" state.
Disable all supply related protections & switch "off" the +2V5 and +3V3 DC/DC converter.
Wait 5 ms.
Switch "off" the remaining DC/DC converters.
Switch stand-by line High / Assert Viper reset.
Stand-by
Important remark:
Reset audio and sound-enable are released 2 s after entering Stand-by, to save power.
E_14700_098.eps
121104

Figure 5-10 “Semi Stand-by” to “Stand-by” flow chart

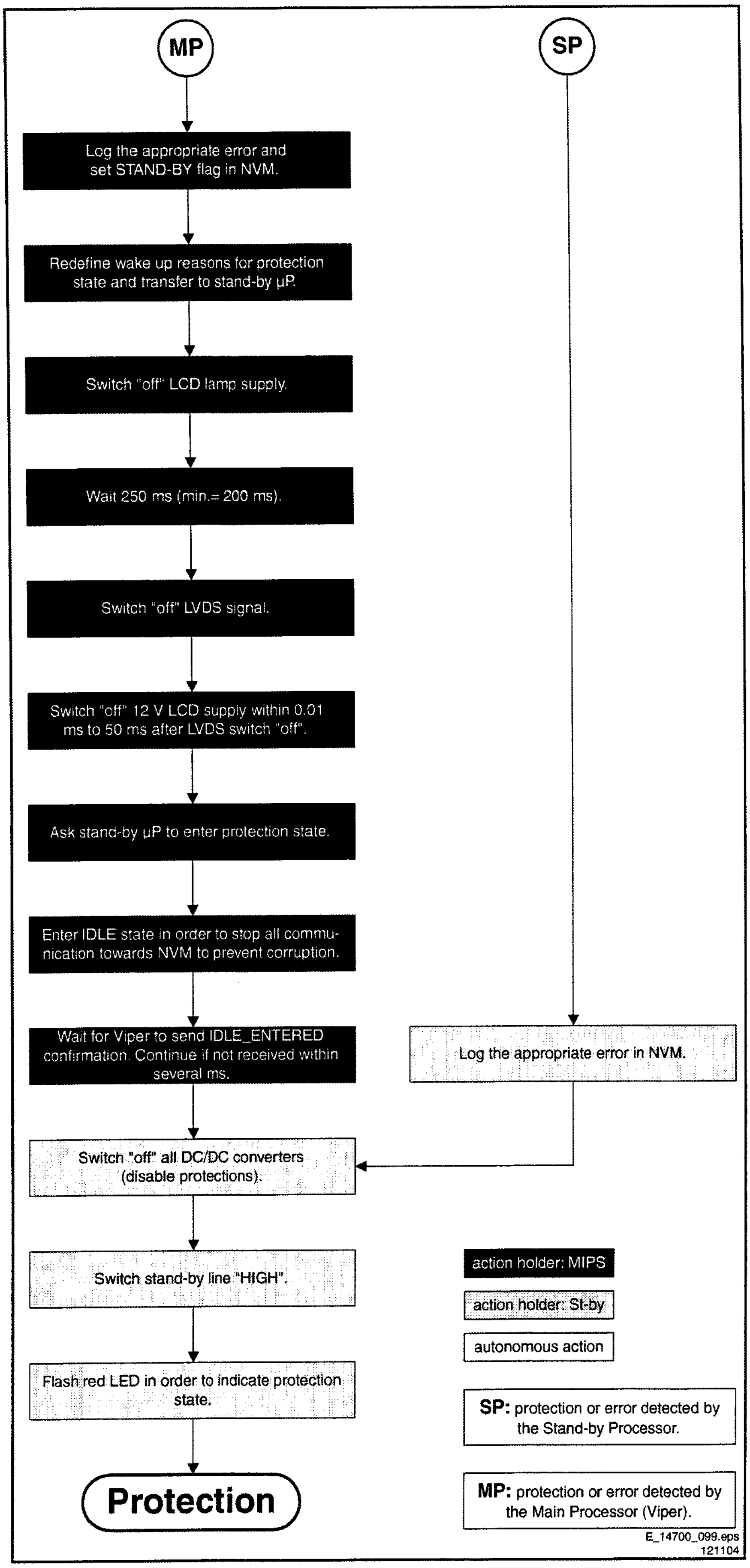
MP
SP
Log the appropriate error and set STAND-BY flag in NVM.
Redefine wake up reasons for protection state and transfer to stand-by µP.
Switch "off" LCD lamp supply.
Wait 250 ms (min.= 200 ms).
Switch "off" LVDS signal.
Switch "off" 12 V LCD supply within 0.01 ms to 50 ms after LVDS switch "off".
Ask stand-by µP to enter protection state.
Enter IDLE state in order to stop all communication towards NVM to prevent corruption.
Wait for Viper to send IDLE_ENTERED confirmation. Continue if not received within several ms.
Log the appropriate error in NVM.
Switch "off" all DC/DC converters (disable protections).
Switch stand-by line "HIGH".
Flash red LED in order to indicate protection state.
Protection
action holder: MIPS
action holder: St-by
autonomous action
SP: protection or error detected by the Stand-by Processor.
MP: protection or error detected by the Main Processor (Viper).
E_14700_099.eps
121104

Figure 5-11 Protection flow chart

Personal Notes:

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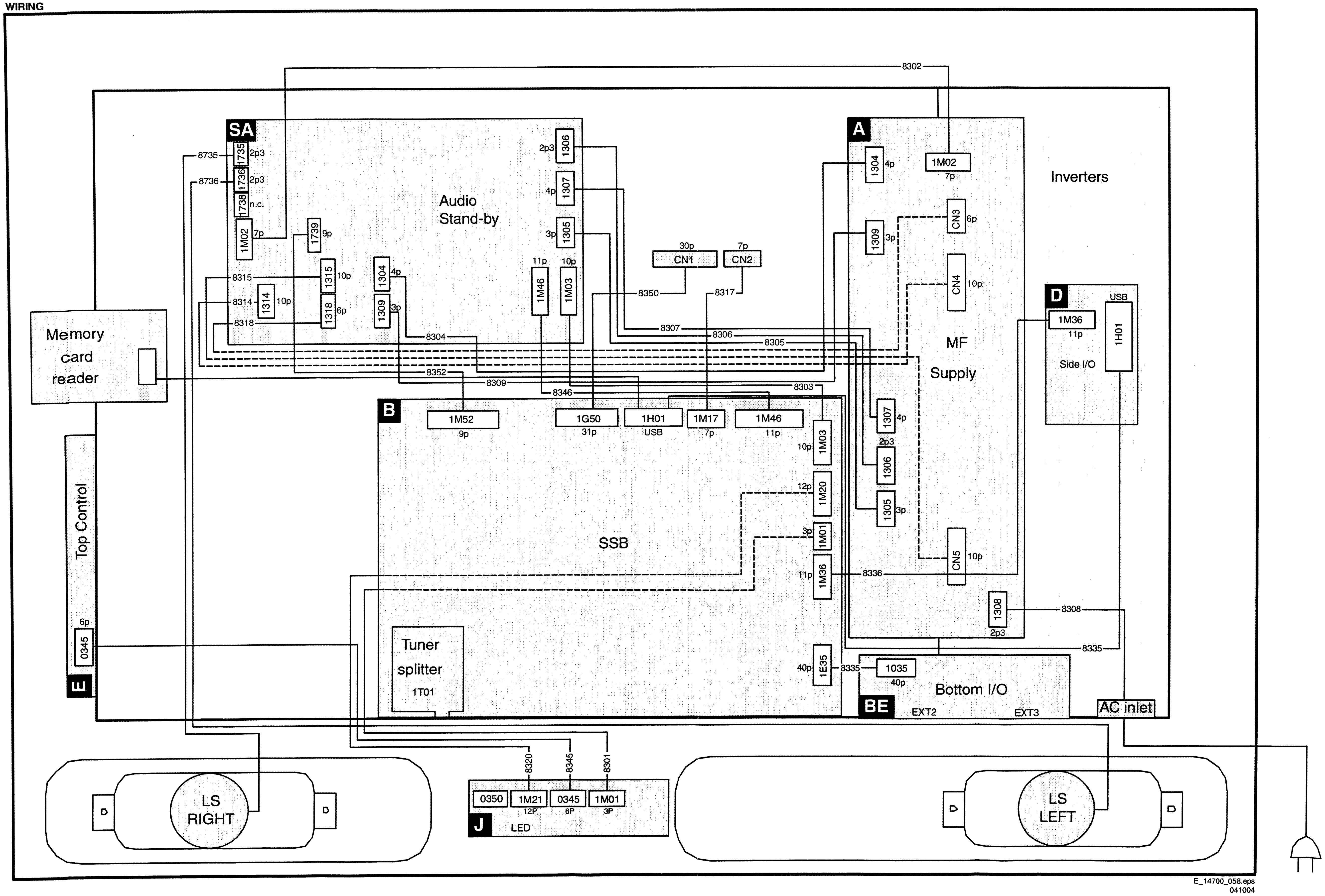
6. Block Diagrams, Testpoint Overview, and Waveforms

Wiring Diagram 32 Inch Sharp LCD


WIRING
SA
Audio Stand-by
1735 2p3
1736 2p3
1738 n.c.
1M02 7p
1739 9p
1315 10p
1314 10p
1318 6p
1304 4p
1309 3p
1306 2p3
1307 4p
1305 3p
1M46 11p
1M03 10p
8735
8736
8315
8314
8318
8304
8352
8309
8346
8350
8317
8307
8306
8305
8303
8302
30p CN1
7p CN2
A
1304 4p
1M02 7p
1309 3p
CN3 6p
CN4 10p
MF Supply
Inverters
1307 4p
1306 2p3
1305 3p
CN5 10p
1308 2p3
8336
8308
8335
D
USB
1M36 11p
1H01
Side I/O
Memory card reader
B
SSB
1M52 9p
1G50 31p
1H01 USB
1M17 7p
1M46 11p
1M03 10p
1M20 12p
1M01 3p
1M36 11p
1E35 40p
Tuner splitter 1T01
Top Control
6p 0345
E
BE
1035 40p
Bottom I/O
EXT2
EXT3
AC inlet
8320
8345
8301
0350
1M21 12P
0345 6P
1M01 3P
J
LED
LS RIGHT
LS LEFT

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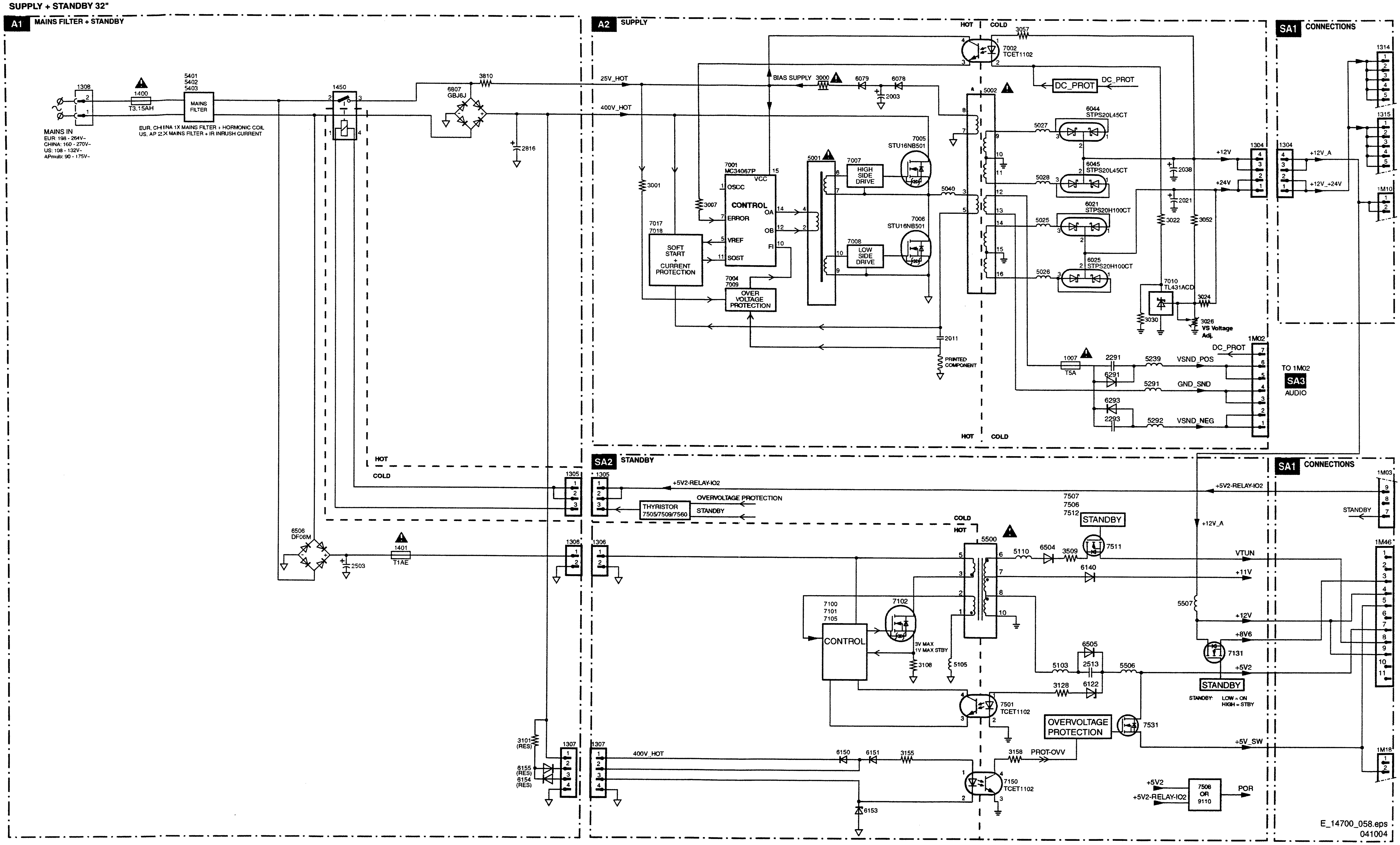
041004

Block Diagram Supply + Standby 32 Inch


SUPPLY + STANDBY 32"
A1 MAINS FILTER + STANDBY
1308
1400
T3.15AH
5401
5402
5403
MAINS FILTER
MAINS IN
EUR: 198 - 264V~
CHINA: 160 - 270V~
US: 108 - 132V~
APmulti: 90 - 175V~
EUR, CHINA 1X MAINS FILTER + HORMONIC COIL
US, AP 2X MAINS FILTER + IR INRUSH CURRENT
1450
3810
6807
GBJ6J
2816
HOT
COLD
1305
6506
DF06M
2503
1401
T1AE
1306
3101 (RES)
6155 (RES)
6154 (RES)
1307
A2 SUPPLY
25V_HOT
400V_HOT
BIAS SUPPLY
3000
6079
6078
2003
3001
3007
7001
MC34067P
VCC
OSCC
CONTROL
ERROR
VREF
SOST
OA
OB
FI
7017
7018
SOFT START + CURRENT PROTECTION
7004
7009
OVER VOLTAGE PROTECTION
5001
7007
HIGH SIDE DRIVE
7008
LOW SIDE DRIVE
7005
STU16NB501
7006
STU16NB501
5040
5002
7002
TCET1102
3057
DC_PROT
5027
6044
STPS20L45CT
5028
6045
STPS20L45CT
5025
6021
STPS20H100CT
5026
6025
STPS20H100CT
2038
2021
3022
3052
7010
TL431ACD
3024
3030
3026
VS Voltage Adj.
+12V
+24V
2011
PRINTED COMPONENT
1007
T5A
2291
6291
5239
VSND_POS
5291
GND_SND
6293
2293
5292
VSND_NEG
1M02
TO 1M02
SA3
AUDIO
SA1 CONNECTIONS
1314
TO DISPLAY
1315
TO DISPLAY
1304
+12V_A
+12V_+24V
1M10
TO
AL
AMBI LIGHT (Optional)
SEE ALSO BLOCK DIAGRAM SUPPLY LINE
SA2 STANDBY
+5V2-RELAY-IO2
OVERVOLTAGE PROTECTION
THYRISTOR
7505/7509/7560
STANDBY
7507
7506
7512
STANDBY
7511
5500
5110
6504
3509
6140
VTUN
+11V
+12V_A
5507
+12V
+8V6
7131
+5V2
5103
6505
2513
5506
3128
6122
STANDBY
STANDBY: LOW = ON HIGH = STBY
7100
7101
7105
7102
CONTROL
3V MAX
1V MAX STBY
3108
5105
7501
TCET1102
OVERVOLTAGE PROTECTION
7531
+5V_SW
6150
6151
3155
3158
PROT-OVV
7150
TCET1102
6153
+5V2
+5V2-RELAY-IO2
7508 OR 9110
POR
1M03
TO 1M03
B10
CONNECTIONS
1M46
TO 1M46
B10
CONNECTIONS
1M18
TO DISPLAY
E_14700_058.eps
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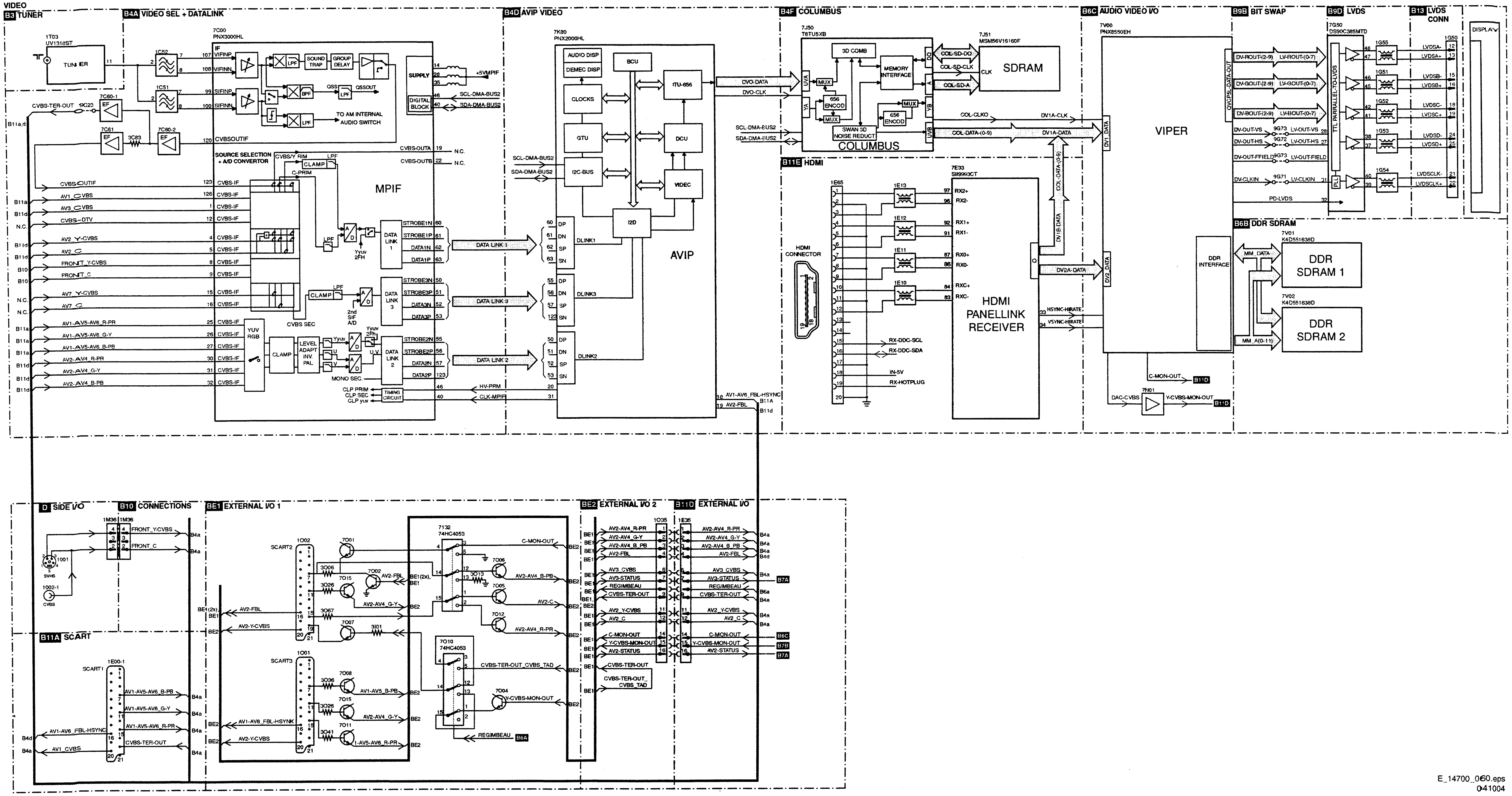
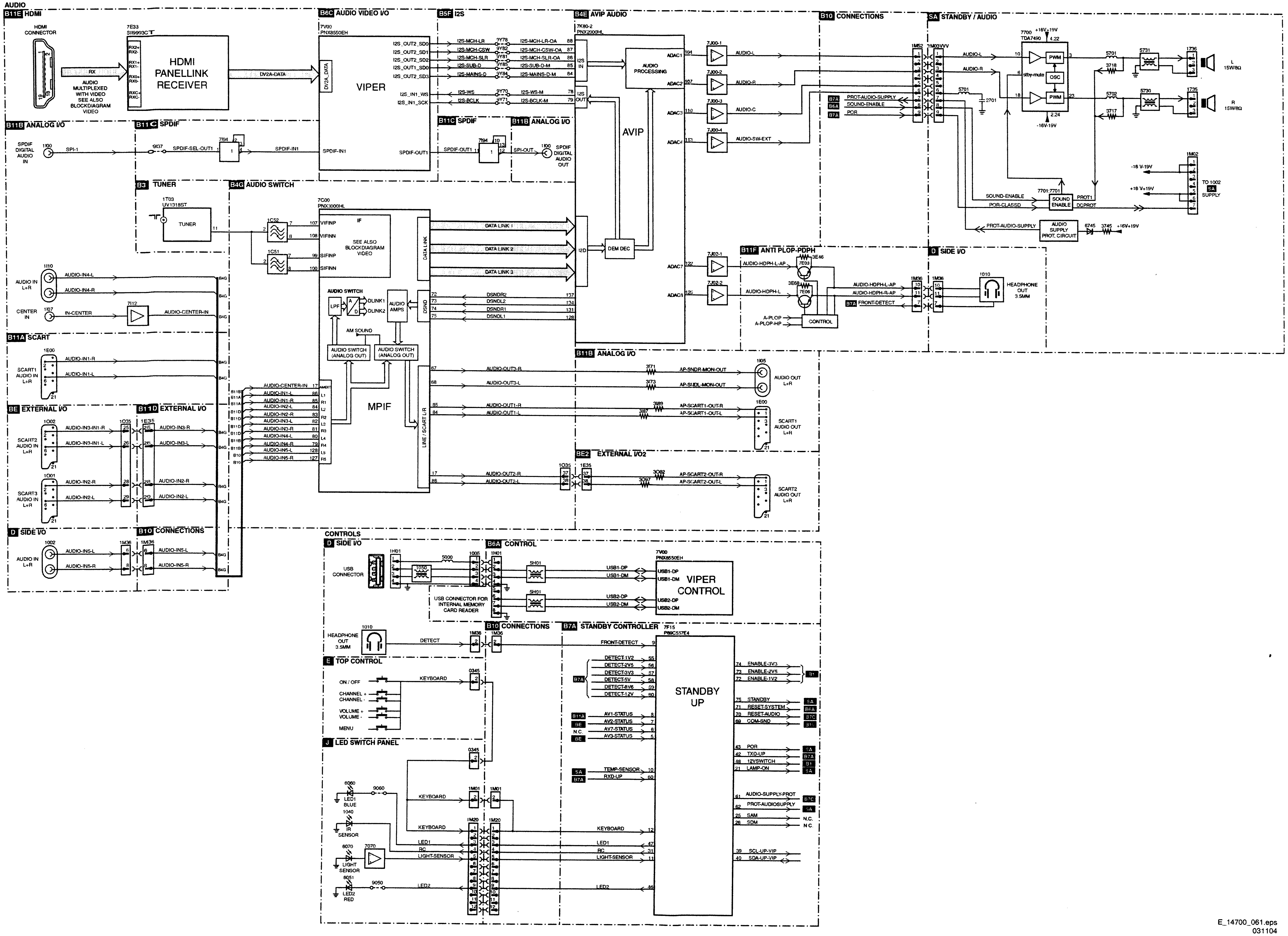
Block Diagram Video


VIDEO
B3 TUNER
1T03
UV1318ST
TUNER
B4A VIDEO SEL + DATALINK
7C00
PNX3000HL
1C52
1C51
IF VIFINP
VIFINN
SIFINP
SIFINN
LPF
SOUND TRAP
GROUP DELAY
BPF
QSS
QSSOUT
TO AM INTERNAL AUDIO SWITCH
SUPPLY
+5VMPIF
DIGITAL BLOCK
SCL-DMA-BUS2
SDA-DMA-BUS2
CVBS-TER-OUT
9C23
7C60-1
EF
7C61
3C83
7C60-2
CVBSOUTIF
CVBS-OUTA
CVBS-OUTB
N.C.
SOURCE SELECTION + A/D CONVERTOR
CVBS/Y RIM
CLAMP
C-PRIM
MPIF
CVBSOUTIF
AV1_CVBS
AV3_CVBS
CVBS-DTV
AV2_Y-CVBS
AV2_C
FRONT_Y-CVBS
FRONT_C
AV7_Y-CVBS
AV7_C
AV1-AV5-AV6_R-PR
AV1-AV5-AV6_G-Y
AV1-AV5-AV6_B-PB
AV2-AV4_R-PR
AV2-AV4_G-Y
AV2-AV4_B-PB
CVBS-IF
B11a,d
B11a
B11d
B10
N.C.
YUV RGB
CLAMP
LEVEL ADAPT INV. PAL
Yyuv 2FH
2nd SIF A/D
CVBS SEC
MONO SEC.
DATA LINK 1
DATA LINK 3
DATA LINK 2
STROBE1N
STROBE1P
DATA1N
DATA1P
STROBE3N
STROBE3P
DATA3N
DATA3P
STROBE2N
STROBE2P
DATA2N
DATA2P
CLP PRIM
CLP SEC
CLP yuv
TIMING CIRCUIT
HV-PRM
CLK-MPIF
B4D AVIP VIDEO
7K80
PNX2000HL
AUDIO DISP
DEMEC DISP
CLOCKS
GTU
I2C-BUS
BCU
ITU-656
DCU
VIDEC
I2D
DP
DN
SP
SN
DLINK1
DLINK3
DLINK2
AVIP
AV1-AV6_FBL-HSYNC
AV2-FBL
B11A
B11d
B4F COLUMBUS
7J50
T6TU5XB
3D COMB
MEMORY INTERFACE
MUX
656 ENCOD
SWAN 3D NOISE REDUCT
COLUMBUS
UVA
YA
YB
UVB
DQ
A
DVO-DATA
DVO-CLK
7J51
MSM56V16160F
SDRAM
COL-SD-DQ
COL-SD-CLK
COL-SD-A
CLK
COL-CLKO
COL-DATA-(0-9)
DV1A-CLK
DV1A-DATA
B11E HDMI
HDMI CONNECTOR
1E65
1E13
1E12
1E11
1E10
7E33
SII9993CT
RX2+
RX2-
RX1+
RX1-
RX0+
RX0-
RXC+
RXC-
HDMI PANELLINK RECEIVER
RX-DDC-SCL
RX-DDC-SDA
IN-5V
RX-HOTPLUG
COL-DATA-(0-9)
DV1B-DATA
DV2A-DATA
HSYNC-HIRATE
VSYNC-HIRATE
B6C AUDIO VIDEO I/O
7V00
PNX8550EH
VIPER
DV1_DATA
DV2_DATA
QVCP5L-DATA-OUT
DDR INTERFACE
C-MON-OUT
DAC-CVBS
7N01
Y-CVBS-MON-OUT
B11D
B9B BIT SWAP
DV-ROUT-(2-9)
LV-ROUT-(0-7)
DV-GOUT-(2-9)
LV-GOUT-(0-7)
DV-BOUT-(2-9)
LV-BOUT-(0-7)
DV-OUT-VS
9G73
LV-OUT-VS
DV-OUT-HS
9G72
LV-OUT-HS
DV-OUT-FFIELD
LV-OUT-FIELD
DV-CLKIN
9G71
LV-CLKIN
PD-LVDS
B9D LVDS
7G50
DS90C385MTD
TTL PARRALLEL-TO-LVDS
PLL
1G55
1G51
1G52
1G53
1G54
B13 LVDS CONN
1G50
LVDSA-
LVDSA+
LVDSB-
LVDSB+
LVDSC-
LVDSC+
LVDSD-
LVDSD+
LVDSCLK-
LVDSCLK+
DISPLAY
B6B DDR SDRAM
7V01
K4D551638D
DDR SDRAM 1
7V02
K4D551638D
DDR SDRAM 2
MM_DATA
MM_A(0-11)
D SIDE I/O
1001
SVHS
1002-1
CVBS
B10 CONNECTIONS
1M36
FRONT_Y-CVBS
FRONT_C
B4a
B11A SCART
1E00-1
SCART1
AV1-AV5-AV6_B-PB
AV1-AV5-AV6_G-Y
AV1-AV5-AV6_R-PR
CVBS-TER-OUT
AV1-AV6_FBL-HSYNC
AV1_CVBS
B4d
B4a
BE1 EXTERNAL I/O 1
1002
SCART2
1001
SCART3
7001
7002
7015
7007
7008
7011
3006
3026
3067
3101
3036
3041
AV2-FBL
AV2-Y-CVBS
AV2-AV4_G-Y
AV1-AV6_FBL-HSYNK
AV1-AV5_B-PB
1-AV5-AV6_R-PR
BE1(2x), BE1
BE2
7132
74HC4053
7010
74HC4053
7006
7005
7012
7004
3013
C-MON-OUT
AV2-AV4_B-PB
AV2-C
AV2-AV4_R-PR
CVBS-TER-OUT_CVBS_TAD
Y-CVBS-MON-OUT
REGIMBEAU
B6A
BE2 EXTERNAL I/O 2
1035
AV2-AV4_R-PR
AV2-AV4_G-Y
AV2-AV4_B_PB
AV2-FBL
AV3_CVBS
AV3-STATUS
REGIMBEAU
CVBS-TER-OUT
AV2_Y-CVBS
AV2_C
C-MON-OUT
Y-CVBS-MON-OUT
AV2-STATUS
CVBS-TER-OUT_CVBS_TAD
BE1
B11D EXTERNAL I/O
1E36
B4a
B4d
B6a
B7A
B6C
B7B

E_14700_060.eps
041004

Block Diagram Audio


AUDIO
B11E HDMI
HDMI CONNECTOR
RX
AUDIO MULTIPLEXED WITH VIDEO SEE ALSO BLOCKDIAGRAM VIDEO
7E33 SII9993CT
HDMI PANELLINK RECEIVER
DV2A-DATA
B6C AUDIO VIDEO I/O
7V00 PNX8550EH
VIPER
I2S_OUT2_SD0
I2S_OUT2_SD1
I2S_OUT2_SD2
I2S_OUT1_SD0
I2S_OUT2_SD3
I2S_IN1_WS
I2S_IN1_SCK
SPDIF-IN1
SPDIF-OUT1
B5F I2S
I2S-MCH-LR 9Y78 I2S-MCH-LR-OA 88
I2S-MCH-CSW 9Y82 I2S-MCH-CSW-OA 87
I2S-MCH-SLR 9Y81 I2S-MCH-SLR-OA 86
I2S-SUB-D 9Y85 I2S-SUB-D-M 85
I2S-MAINS-D 9Y84 I2S-MAINS-D-M 84
I2S-WS 9Y70 I2S-WS-M 78
I2S-BCLK 9Y71 I2S-BCLK-M 79
B4E AVIP AUDIO
7K80-2 PNX2000HL
I2S IN
I2S OUT
AUDIO PROCESSING
AVIP
I2D
DEM DEC
ADAC1 ADAC2 ADAC3 ADAC4 ADAC7 ADAC8
7J00-1 AUDIO-L
7J00-2 AUDIO-R
7J00-3 AUDIO-C
7J00-4 AUDIO-SW-EXT
B10 CONNECTIONS
1M52 1M03VVV
B7A PROT-AUDIO-SUPPLY
B6A SOUND-ENABLE
B7A POR
SA STANDBY / AUDIO
7700 TDA7490
+16V+19V
-16V-19V
PWM OSC stby-mute
5701 5731 1736 L 15W/8Ω
5702 5730 1735 R 15W/8Ω
3718 3717 2701
1M02
-16 V-19V
+16 V+19V
TO 1002 SA SUPPLY
7701:7701 SOUND ENABLE
PROT1 DCPROT
SOUND-ENABLE
POR-CLASSD
PROT-AUDIO-SUPPLY
AUDIO SUPPLY PROT. CIRCUIT
6745 3745 +16V+19V
B11B ANALOG I/O
SPDIF DIGITAL AUDIO IN 1100 SPI-1
B11C SPDIF
9137 SPDIF-SEL-OUT1 7194
B11C SPDIF SPDIF-OUT1 7194
B11B ANALOG I/O SPI-OUT 1100 SPDIF DIGITAL AUDIO OUT
B3 TUNER
1T03 UV1318ST TUNER
B4G AUDIO SWITCH
7C00 PNX3000HL
1C52 1C51
VIFINP VIFINN SIFINP SIFINN
IF SEE ALSO BLOCKDIAGRAM VIDEO
DATA LINK
DATA LINK 1
DATA LINK 2
DATA LINK 3
AUDIO SWITCH
LPF A D DLINK1 DLINK2
AUDIO AMPS
DSND
DSNDR2 DSNDL2 DSNDR1 DSNDL1
AM SOUND
AUDIO SWITCH (ANALOG OUT)
MPIF
LINE / SCART L/R
AUDIO IN L+R 1110 AUDIO-IN4-L AUDIO-IN4-R
CENTER IN 1107 IN-CENTER 7112 AUDIO-CENTER-IN
B11A SCART
SCART1 AUDIO IN L+R 1E00 AUDIO-IN1-R AUDIO-IN1-L
BE EXTERNAL I/O
B11D EXTERNAL I/O
SCART2 AUDIO IN L+R 1002 AUDIO-IN3-IN1-R AUDIO-IN3-IN1-L 1035 1E35 AUDIO-IN3-R AUDIO-IN3-L
SCART3 AUDIO IN L+R 1001 AUDIO-IN2-R AUDIO-IN2-L
D SIDE I/O
B10 CONNECTIONS
AUDIO IN L+R 1002 AUDIO-IN5-L AUDIO-IN5-R 1M36
AUDIO-CENTER-IN AUDIO-IN1-L AUDIO-IN1-R AUDIO-IN2-L AUDIO-IN2-R AUDIO-IN3-L AUDIO-IN3-R AUDIO-IN4-L AUDIO-IN4-R AUDIO-IN5-L AUDIO-IN5-R
B11B ANALOG I/O
AUDIO-OUT3-R 3171 AP-SNDR-MON-OUT
AUDIO-OUT3-L 3173 AP-SNDL-MON-OUT
1105 AUDIO OUT L+R
AUDIO-OUT1-R 3189 AP-SCART1-OUT-R
AUDIO-OUT1-L 3187 AP-SCART1-OUT-L
1E00 SCART1 AUDIO OUT L+R
BE2 EXTERNAL I/O2
AUDIO-OUT2-R 3082 AP-SCART2-OUT-R
AUDIO-OUT2-L 3097 AP-SCART2-OUT-L
SCART2 AUDIO OUT L+R
B11F ANTI PLOP-PDPH
7J02-1 AUDIO-HDPH-L-AP 3E46 7E03
7J02-2 AUDIO-HDPH-L 3E68 7E06
A-PLOP A-PLOP-HP CONTROL
AUDIO-HDPH-L-AP AUDIO-HDPH-R-AP
B7A FRONT-DETECT
D SIDE I/O
1010 HEADPHONE OUT 3.5MM
CONTROLS
D SIDE I/O
USB CONNECTOR 1H01 1050 5000 1005
USB CONNECTOR FOR INTERNAL MEMORY CARD READER
B6A CONTROL
5H01
USB1-DP USB1-DM USB2-DP USB2-DM
7V00 PNX8550EH VIPER CONTROL
HEADPHONE OUT 3.5MM 1010 DETECT 1M36
E TOP CONTROL
ON / OFF CHANNEL + CHANNEL - VOLUME + VOLUME - MENU
KEYBOARD 0345
J LED SWITCH PANEL
6060 LED1 BLUE 9060
1040 IR SENSOR
6070 LIGHT SENSOR 7070
6051 LED2 RED 9050
1M01 1M20
KEYBOARD LED1 RC LIGHT-SENSOR LED2
B10 CONNECTIONS
B7A STANDBY CONTROLLER
7F15 P89C557E4
STANDBY UP
FRONT-DETECT
DETECT-1V2 DETECT-2V5 DETECT-3V3 DETECT-5V DETECT-8V6 DETECT-12V
AV1-STATUS AV2-STATUS AV7-STATUS AV3-STATUS
N.C.
TEMP-SENSOR RXD-UP
ENABLE-3V3 ENABLE-2V5 ENABLE-1V2 B1
STANDBY RESET-SYSTEM RESET-AUDIO COM-SND
POR TXD-UP 12VSWITCH LAMP-ON
AUDIO-SUPPLY-PROT PROT-AUDIOSUPPLY
SAM SDM N.C.
SCL-UP-VIP SDA-UP-VIP

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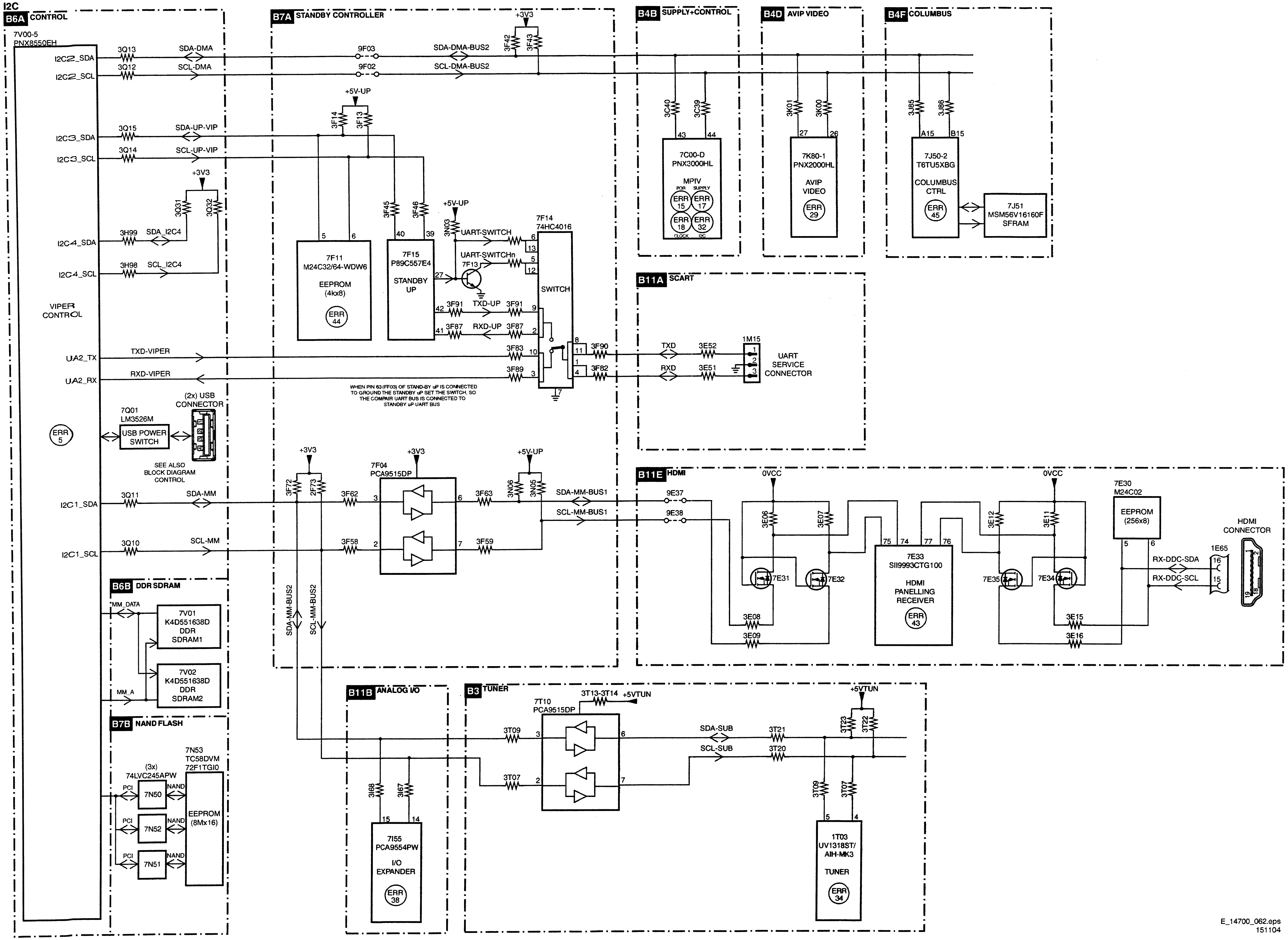
I²C IC's overview


I2C
B6A CONTROL
7V00-5
PNX8550EH
I2C2_SDA
I2C2_SCL
I2C3_SDA
I2C3_SCL
I2C4_SDA
I2C4_SCL
VIPER CONTROL
UA2_TX
UA2_RX
I2C1_SDA
I2C1_SCL
ERR 5
3Q13
3Q12
3Q15
3Q14
3Q11
3Q10
SDA-DMA
SCL-DMA
SDA-UP-VIP
SCL-UP-VIP
+3V3
3Q31
3Q32
3H99
3H98
SDA_I2C4
SCL_I2C4
TXD-VIPER
RXD-VIPER
7Q01
LM3526M
USB POWER SWITCH
(2x) USB CONNECTOR
SEE ALSO BLOCK DIAGRAM CONTROL
SDA-MM
SCL-MM
B6B DDR SDRAM
MM_DATA
MM_A
7V01
K4D551638D
DDR
SDRAM1
7V02
K4D551638D
DDR
SDRAM2
B7B NAND FLASH
(3x)
74LVC245APW
7N50
7N52
7N51
PCI
NAND
7N53
TC58DVM
72F1TGI0
EEPROM
(8Mx16)
B7A STANDBY CONTROLLER
9F03
9F02
SDA-DMA-BUS2
SCL-DMA-BUS2
+3V3
3F42
3F43
+5V-UP
3F14
3F13
3F45
3F46
7F11
M24C32/64-WDW6
EEPROM
(4kx8)
ERR 44
7F15
P89C557E4
STANDBY UP
3N03
UART-SWITCH
UART-SWITCHn
7F13
7F14
74HC4016
SWITCH
3F91
TXD-UP
3F87
RXD-UP
3F83
3F89
3F90
3F82
WHEN PIN 63 (FF03) OF STAND-BY uP IS CONNECTED TO GROUND THE STANDBY uP SET THE SWITCH, SO THE COMPAIR UART BUS IS CONNECTED TO STANDBY uP UART BUS
3F72
2F73
7F04
PCA9515DP
3F62
3F58
3F63
3F59
3N06
3N05
SDA-MM-BUS1
SCL-MM-BUS1
SDA-MM-BUS2
SCL-MM-BUS2
B4B SUPPLY+CONTROL
3C40
3C39
7C00-D
PNX3000HL
MPIV
POR
SUPPLY
ERR 15
ERR 17
ERR 18
ERR 32
CLOCK
I2C
B4D AVIP VIDEO
3K01
3K00
7K80-1
PNX2000HL
AVIP VIDEO
ERR 29
B4F COLUMBUS
3J85
3J86
A15
B15
7J50-2
T6TU5XBG
COLUMBUS CTRL
ERR 45
7J51
MSM56V16160F
SFRAM
B11A SCART
TXD
RXD
3E52
3E51
1M15
UART SERVICE CONNECTOR
B11E HDMI
9E37
9E38
0VCC
3E06
3E07
3E12
3E11
7E31
7E32
7E35
7E34
3E08
3E09
3E15
3E16
7E33
SII9993CTG100
HDMI PANELLING RECEIVER
ERR 43
7E30
M24C02
EEPROM
(256x8)
RX-DDC-SDA
RX-DDC-SCL
1E65
HDMI CONNECTOR
B11B ANALOG I/O
3168
3167
7I55
PCA9554PW
I/O EXPANDER
ERR 38
B3 TUNER
7T10
PCA9515DP
3T13-3T14
+5VTUN
3T09
3T07
SDA-SUB
SCL-SUB
3T21
3T20
3T23
3T22
3T09
3T07
1T03
UV1318ST/
AIH-MK3
TUNER
ERR 34

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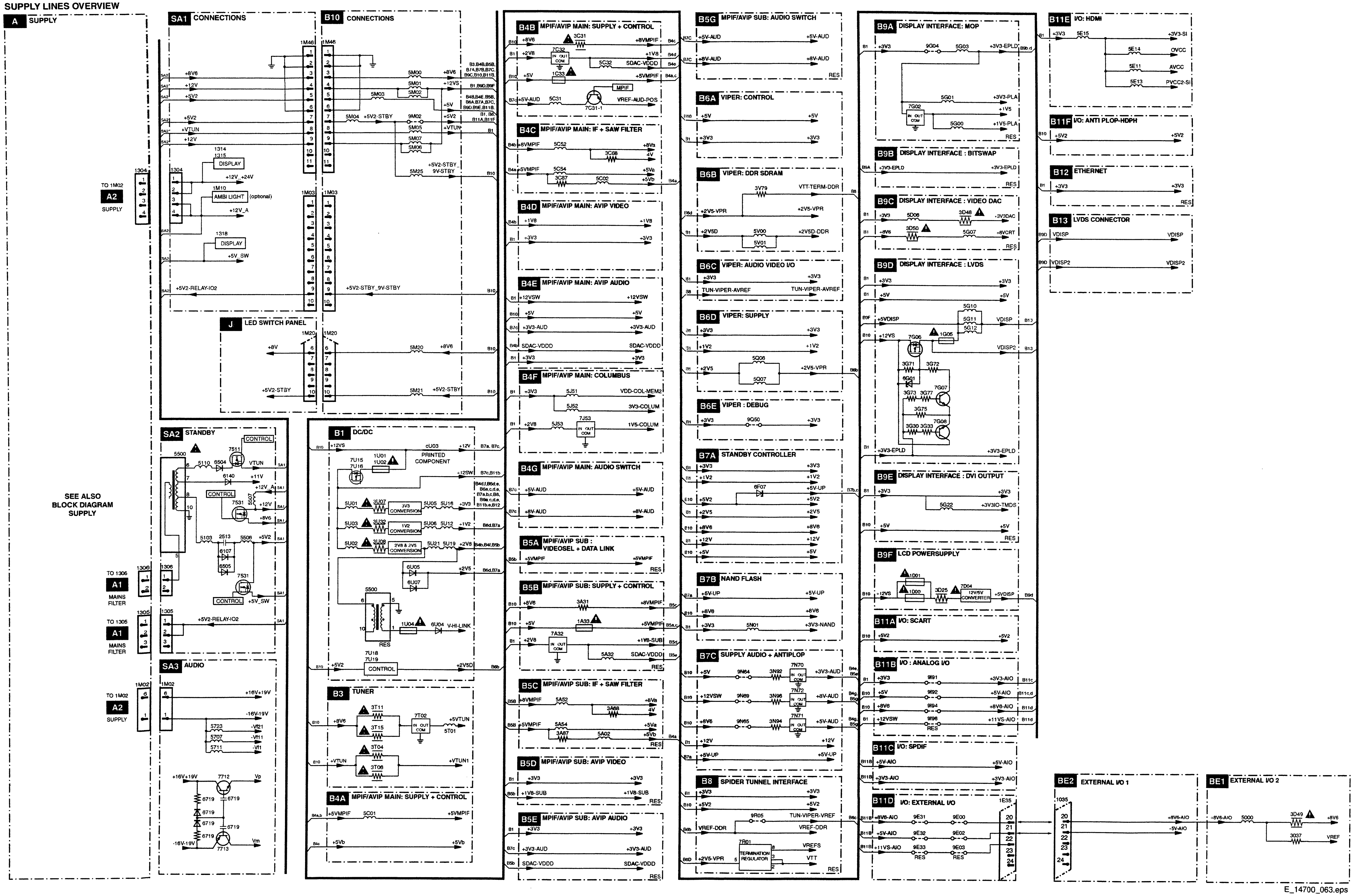
Supply Lines Overview


SUPPLY LINES OVERVIEW
A SUPPLY
SEE ALSO BLOCK DIAGRAM SUPPLY
TO 1M02 A2 SUPPLY
TO 1306 A1 MAINS FILTER
TO 1305 A1 MAINS FILTER
TO 1M02 A2 SUPPLY
SA1 CONNECTIONS
B10 CONNECTIONS
J LED SWITCH PANEL
SA2 STANDBY
SA3 AUDIO
B1 DC/DC
B3 TUNER
B4A MPIF/AVIP MAIN: SUPPLY + CONTROL
B4B MPIF/AVIP MAIN: SUPPLY + CONTROL
B4C MPIF/AVIP MAIN: IF + SAW FILTER
B4D MPIF/AVIP MAIN: AVIP VIDEO
B4E MPIF/AVIP MAIN: AVIP AUDIO
B4F MPIF/AVIP MAIN: COLUMBUS
B4G MPIF/AVIP MAIN: AUDIO SWITCH
B5A MPIF/AVIP SUB : VIDEOSEL + DATA LINK
B5B MPIF/AVIP SUB: SUPPLY + CONTROL
B5C MPIF/AVIP SUB: IF + SAW FILTER
B5D MPIF/AVIP SUB: AVIP VIDEO
B5E MPIF/AVIP SUB: AVIP AUDIO
B5G MPIF/AVIP SUB: AUDIO SWITCH
B6A VIPER: CONTROL
B6B VIPER: DDR SDRAM
B6C VIPER: AUDIO VIDEO I/O
B6D VIPER: SUPPLY
B6E VIPER : DEBUG
B7A STANDBY CONTROLLER
B7B NAND FLASH
B7C SUPPLY AUDIO + ANTIPLOP
B8 SPIDER TUNNEL INTERFACE
B9A DISPLAY INTERFACE: MOP
B9B DISPLAY INTERFACE : BITSWAP
B9C DISPLAY INTERFACE : VIDEO DAC
B9D DISPLAY INTERFACE : LVDS
B9E DISPLAY INTERFACE : DVI OUTPUT
B9F LCD POWERSUPPLY
B11A I/O: SCART
B11B I/O : ANALOG I/O
B11C I/O: SPDIF
B11D I/O: EXTERNAL I/O
B11E I/O: HDMI
B11F I/O: ANTI PLOP-HDPH
B12 ETHERNET
B13 LVDS CONNECTOR
BE2 EXTERNAL I/O 1
BE1 EXTERNAL I/O 2
+8V6
+12V
+5V2
+VTUN
+5V2-STBY
9V-STBY
+5V2-RELAY-IO2
+5V_SW
+3V3
+1V2
+2V5
+5V
+12VSW
+8VMPIF
+5VMPIF
+1V8
SDAC-VDDD
+5V-AUD
+8V-AUD
+3V3-AUD
VDISP
VDISP2
+5VDISP
+3V3-EPLD
+5V-UP
+5V-AIO
+3V3-AIO
+8V6-AIO
+11VS-AIO
VREF-DDR
TUN-VIPER-AVREF
+16V+19V
-16V-19V
Vp
Vm

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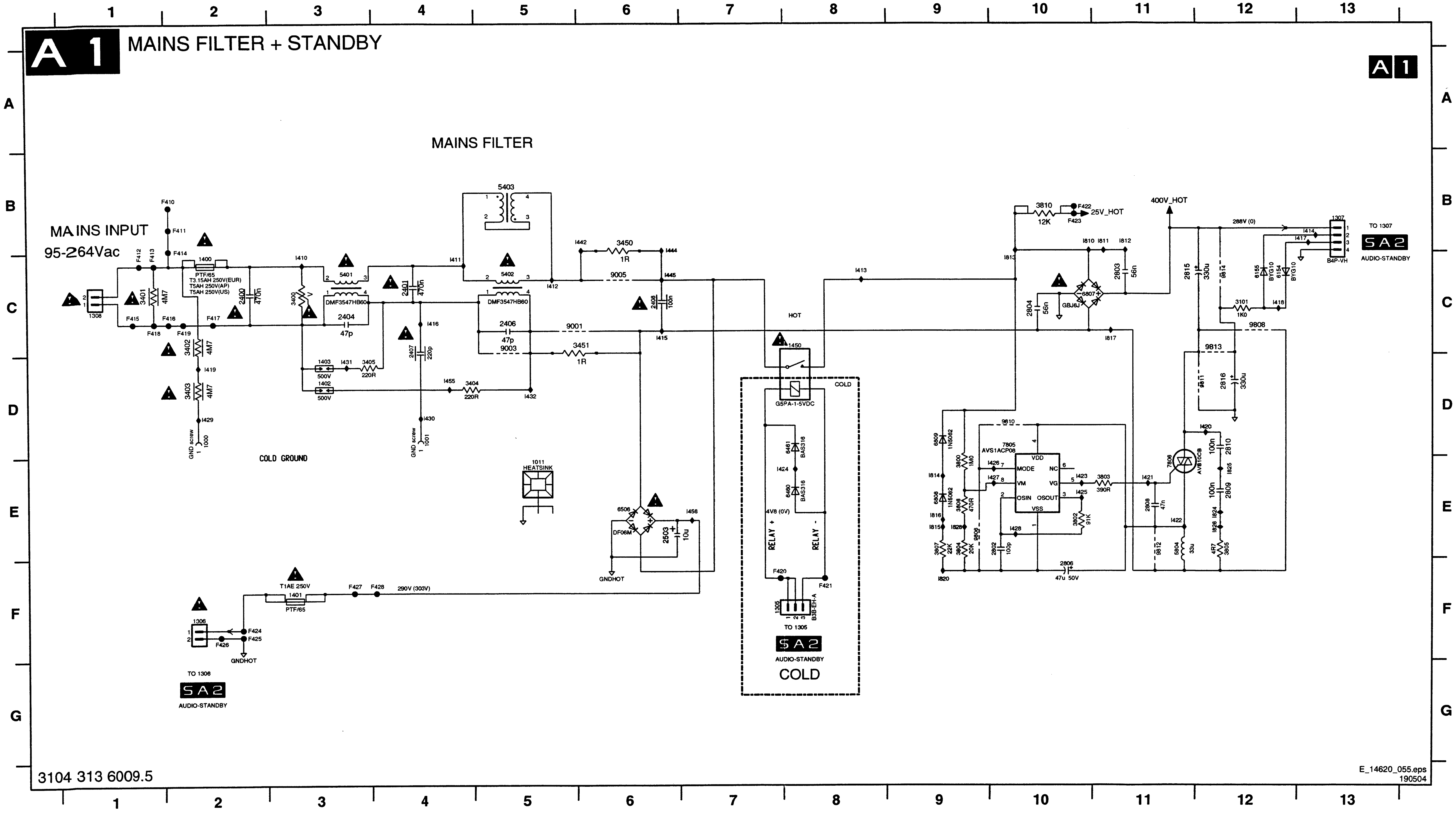
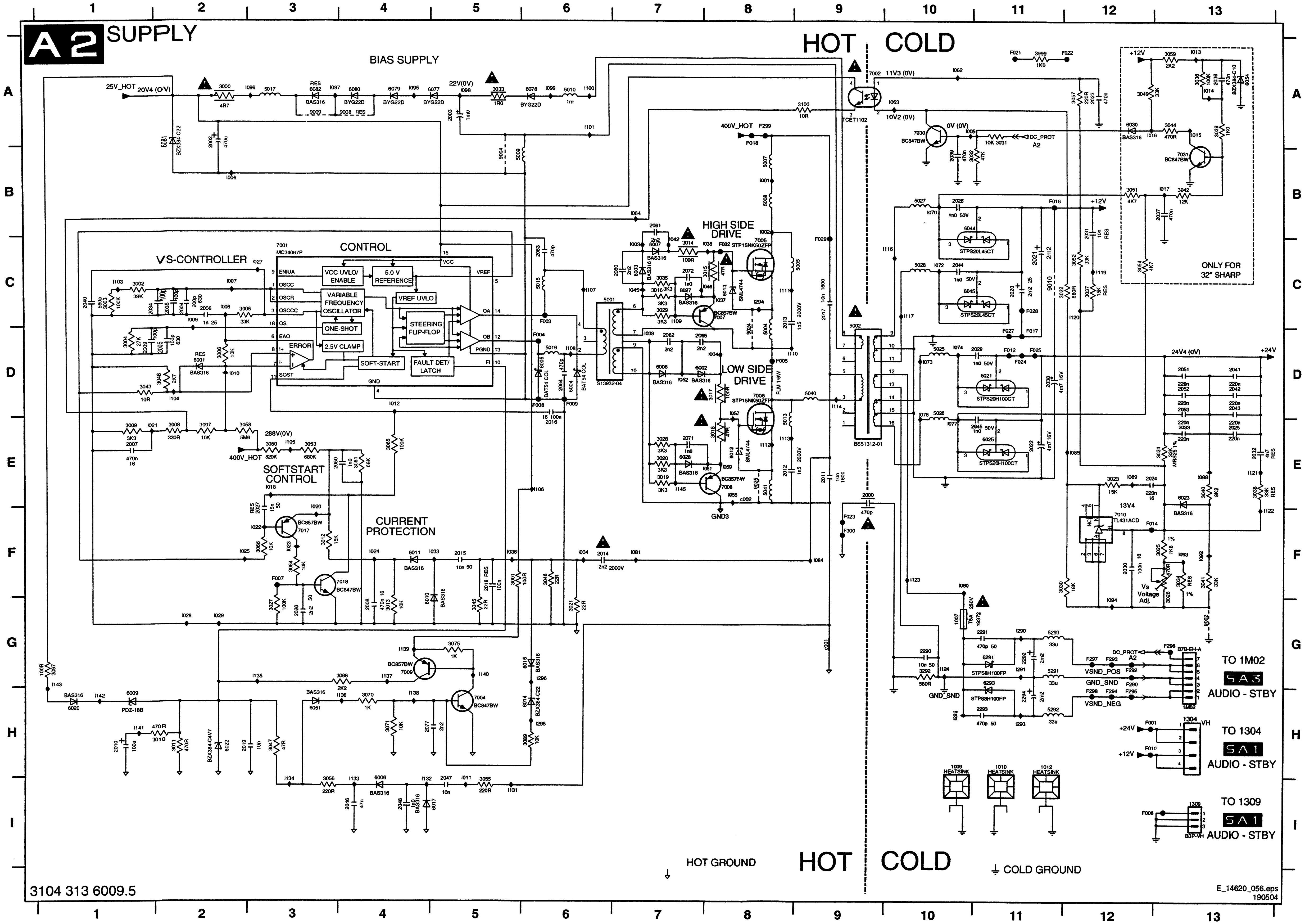
7. Circuit Diagrams and PWB Layouts

MF Supply Unit (30-32 Inch): Mains Filter and Standby


A1
MAINS FILTER + STANDBY
MAINS FILTER
MAINS INPUT
95-264Vac
1308
1400
PTF/65
T3.15AH 250V(EUR)
T5AH 250V(AP)
T5AH 250V(US)
2400 470n
3401 4M7
3402 4M7
3403 4M7
3400
5401
DMF3547HB60
2404 47p
2401 470n
2407 220p
1403 500V
1402 500V
3405 220R
3404 220R
5403
5402
DMF3547HB60
2406 47p
9003
9001
9005
3450 1R
3451 1R
2408 100n
1000 GND screw
1001 GND screw
COLD GROUND
1011 HEATSINK
6506 DF06M
2503 10u
GNDHOT
HOT
COLD
1450
G5PA-1-5VDC
6461 BAS316
6460 BAS316
4V8 (0V)
RELAY +
RELAY -
1305
B3B-EH-A
TO 1305
SA2
AUDIO-STANDBY
COLD
1306
TO 1306
SA2
AUDIO-STANDBY
T1AE 250V
1401
PTF/65
290V (303V)
3810 12K
25V_HOT
400V_HOT
288V (0)
6807 GBJ6J
2804 56n
2803 56n
2815 330u
2816 330u
3101 1K0
6155 BYG10
6154 BYG10
1307
B4P-VH
TO 1307
SA2
AUDIO-STANDBY
9808
9813
9810
7805 AVS1ACP08
VDD
MODE
NC
VM
VG
OSIN
OSOUT
VSS
3803 390R
3802 91K
3800 1M0
3806 470R
3807 22K
3804 20K
6809 1N5062
6808 1N5062
2802 100p
2806 47u 50V
2808 47n
7806 AVS10CB
2810 100n
2809 100n
5804 33u
3805 4R7
A1
3104 313 6009.5
E_14620_055.eps
190504

1000	D2
1001	D4
1011	E5
1305	F7
1306	F2
1307	B13
1308	C1
1400	C2
1401	F3
1402	D3
1403	D3
1450	C8
2400	C2
2401	C4
2404	C3
2406	C5
2407	C4
2408	C6
2503	E6
2802	E10
2803	C11
2804	C10
2806	F10
2808	E11
2809	E12
2810	D12
2815	C11
2816	D12
3101	C12
3400	C3
3401	C1
3402	C2
3403	D2
3404	D4
3405	D3
3450	B6
3451	C6
3800	E9
3802	E10
3803	E11
3804	E9
3805	E12
3806	E9
3807	E9
3810	B10
5401	C3
5402	C5
5403	B5
5804	E11
6154	C12
6155	C12
6460	E8
6461	D8
6506	E6
6807	C10
6808	E9
6809	D9
7805	D10
7806	E11
9001	C5
9003	C5
9005	C6
9806	E9
9808	C12
9810	D10
9811	D12
9812	E11
9813	C12
9814	C12
F410	B2
F411	B2
F412	C1
F413	C1
F414	C2
F415	C1
F416	C2
F417	C2
F418	C1
F419	C2
F420	F7
F421	F8
F422	B10
F423	B10
F424	F2
F425	F2
F426	F2
F427	F3
F428	F4
I410	C3
I411	C4
I412	C5
I413	C8
I414	B13
I415	C6
I416	C4
I417	B13
I418	C12
I419	D2
I420	D12
I421	E11
I422	E11
I423	E10
I424	E7
I425	E10
I426	E10
I427	E10
I428	E10
I429	D2
I430	D4
I431	D3
I432	D5
I442	B6
I444	B6
I445	C6
I455	D4
I456	E7
I810	B10
I811	B11
I812	B11
I813	C10
I814	E9
I815	E9
I816	E9
I817	C11
I820	F9
I824	E12
I825	E12
I826	E12
I828	E9

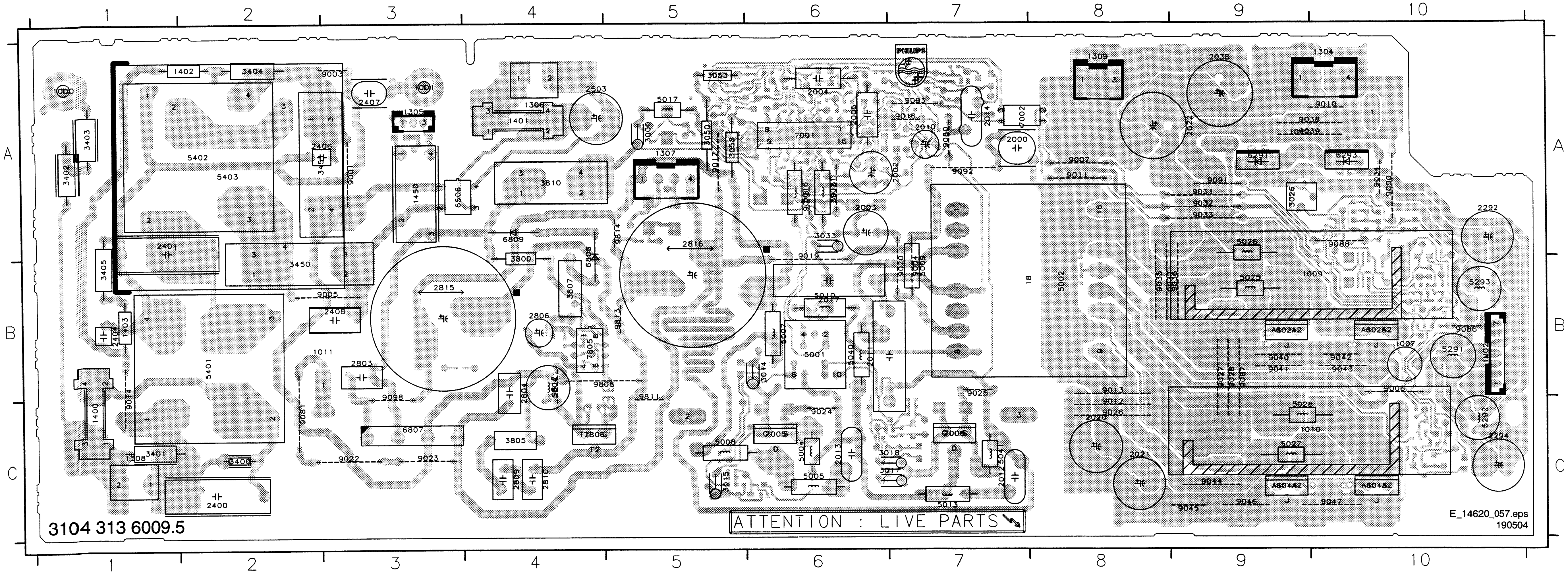
MF Supply Unit (30-32 Inch): Supply


A2
SUPPLY
BIAS SUPPLY
HOT
COLD
25V_HOT
20V4 (0V)
22V(0V)
400V_HOT
11V3 (0V)
10V2 (0V)
0V (0V)
DC_PROT
TCET1102
VS-CONTROLLER
CONTROL
7001
MC34067P
VCC UVLO/ ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
VREF UVLO
ONE-SHOT
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/ LATCH
ENIUA
OSCC
OSCR
OSCCC
OS
EAO
SOST
GND
VCC
VREF
OA
OB
PGND
FI
HIGH SIDE DRIVE
LOW SIDE DRIVE
STP15NK50ZFP
S13932-04
BS51312-01
288V(0V)
400V_HOT
SOFTSTART CONTROL
CURRENT PROTECTION
BC857BW
BC847BW
BAS316
BYG22D
BZX384-C22
BZX384-C4V7
PDZ-18B
BAT54 COL
SML4744
STPS20L45CT
STPS20H100CT
STPS8H100FP
TL431ACD
13V4
Vs Voltage Adj.
ONLY FOR 32" SHARP
+12V
24V4 (0V)
+24V
VSND_POS
GND_SND
VSND_NEG
B7B-EH-A
1M02
TO 1M02
SA3
AUDIO - STBY
1304
VH
+24V
+12V
TO 1304
SA1
AUDIO - STBY
1309
B3P-VH
TO 1309
SA1
AUDIO - STBY
1009 HEATSINK
1010 HEATSINK
1012 HEATSINK
T5A 250V 19372
HOT GROUND
COLD GROUND
3104 313 6009.5
E_14620_056.eps
190504
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I

1007	G10
1009	H10
1010	H11
1012	H11
1304	H13
1309	I13
1M02	H13
2000	E9
2002	A2
2003	A5
2004	C2
2005	D2
2006	C2
2007	E1
2008	G4
2009	D1
2010	H1
2011	E9
2012	E8
2013	C8
2014	F6
2015	F5
2016	E6
2017	C9
2018	F5
2019	H2
2020	C11
2021	C11
2022	E11
2023	A12
2024	E12
2025	E13
2026	G3
2027	F3
2028	B10
2029	D11
2030	F12
2031	B12
2032	E13
2033	E13
2034	C1
2035	C2
2036	A13
2037	B13
2038	D11
2039	B10
2040	C1
2041	D13
2042	D13
2043	D13
2044	C10
2045	E11
2046	I4
2047	I5
2048	I4
2050	E3
2051	D13
2052	D13
2053	D13
2060	C7
2061	B7
2062	D7
2063	C6
2064	D6
2065	D7
2071	E7
2072	C7
2077	H4
2290	G10
2291	G11
2292	G11
2293	H11
2294	H11
3000	A2
3001	F5
3002	C1
3003	C1
3004	D1
3005	C2
3006	D2
3007	E2
3008	E2
3009	E1
3010	H2
3011	H2
3012	F3
3013	G4
3014	C7
3015	C8
3016	C7
3017	D8
3018	E8
3019	E7
3020	E7
3021	G6
3022	C11
3023	E12
3024	E13
3025	F13
3026	G13
3027	G3
3028	E7
3029	C7
3030	F11
3031	A11
3032	B10
3033	A5
3034	F13
3035	C7
3036	A13
3037	C12
3038	E13
3039	A13
3040	E13
3041	F13
3042	B13
3043	D1
3044	A13
3045	G5
3046	F6
3047	H3
3048	D2
3049	A12
3050	E3
3051	B12
3052	C12
3053	E3
3054	C12
3055	I5
3056	I3
3057	A12
3058	E2
3059	A13
3061	E4
3064	F3
3065	E4
3066	F3
3067	G1
3068	G4
3070	H4
3071	H4
3075	G5
3089	H6
3100	A9
3292	G10
3999	A11
5001	C6
5002	D9
5004	D8
5005	C9
5007	B8
5008	B8
5009	B5
5010	A6
5013	E8
5015	C6
5016	D6
5017	A3
5025	D10
5026	D10
5027	B10
5028	C10
5040	D9
5041	E8
5291	G11
5292	H11
5293	G11
6001	D2
6002	D7
6003	C7
6004	D6
6005	D6
6006	I4
6007	C7
6008	D7
6009	H1
6010	G4
6011	F4
6012	E8
6013	C8
6014	H6
6015	G6
6017	I5
6020	H1
6021	D11
6022	H2
6023	E13
6025	E11
6027	C7
6028	E7
6030	A12
6044	B10
6045	C10
6051	H3
6054	A13
6077	A5
6078	A6
6079	A4
6080	A4
6081	A2
6082	A3
6291	G11
6293	G11
7001	C3
7002	A9
7004	H5
7005	C8
7006	D8
7007	C8
7008	E8
7009	G4
7010	F12
7017	F3
7018	F3
7030	A10
7031	B13
9002	G13
9004	B5
9008	A4
9009	A3
9010	C11
9024	D8
9025	E8
F001	H12
F002	C8
F003	C6
F004	D6
F005	D8
F006	I12
F007	F3
F008	D6
F009	D6
F010	H12
F012	D11
F014	F12
F016	B11
F017	D11
F018	A8
F021	A11
F022	A12
F023	F9
F024	D11
F025	D11
F027	D11
F028	C11
F029	C9
F290	G12
F292	G12
F293	G12
F294	H12
F295	H12
F296	G13
F297	G12
F298	H12
F299	A8
F300	F9
I001	B8
I002	B8
I003	C7
I004	D8
I005	A10
I006	B2
I007	C2
I008	C2
I009	C2
I010	D2
I011	I5
I012	D4
I013	A13
I014	A13
I015	A13
I016	A12
I017	B13
I018	E3
I020	F3
I021	E1
I022	F3
I023	F3
I024	F4
I025	F2
I027	C3
I028	G2
I029	G2
I033	F5
I034	F6
I036	F5
I037	C8
I038	C8
I039	D7
I042	C7
I045	C7
I046	C8
I051	E8
I052	D7
I055	E8
I057	D8
I059	E8
I062	A10
I063	A10
I064	B7
I070	B10
I072	C10
I073	D10
I074	D10
I076	D10
I077	E10
I080	F10
I081	F7
I084	F9
I085	E12
I088	E13
I089	E12
I092	F13
I093	F13
I094	G12
I095	A4
I096	A3
I097	A3
I098	A5
I099	A6
I100	A6
I101	A6
I103	C1
I104	D2
I105	E3
I106	E6
I107	C6
I108	D6
I109	C7
I110	D8
I111	C8
I112	E8
I113	E8
I114	D9
I116	C10
I117	C10
I119	C12
I120	C12
I121	E13
I122	F13
I123	F10
I124	G10
I131	I5
I132	I4
I133	I4
I134	I3
I135	G3
I136	H4
I137	G4
I138	H4
I139	G4
I140	G5
I141	H1
I142	H1
I143	G1
I145	E7
I290	G11
I291	G11
I292	H10
I293	H11
I294	C8
I295	H6
I296	G6
c001	G9
c002	E8

Layout MF Supply Unit (30-32 Inch) (Top Side)

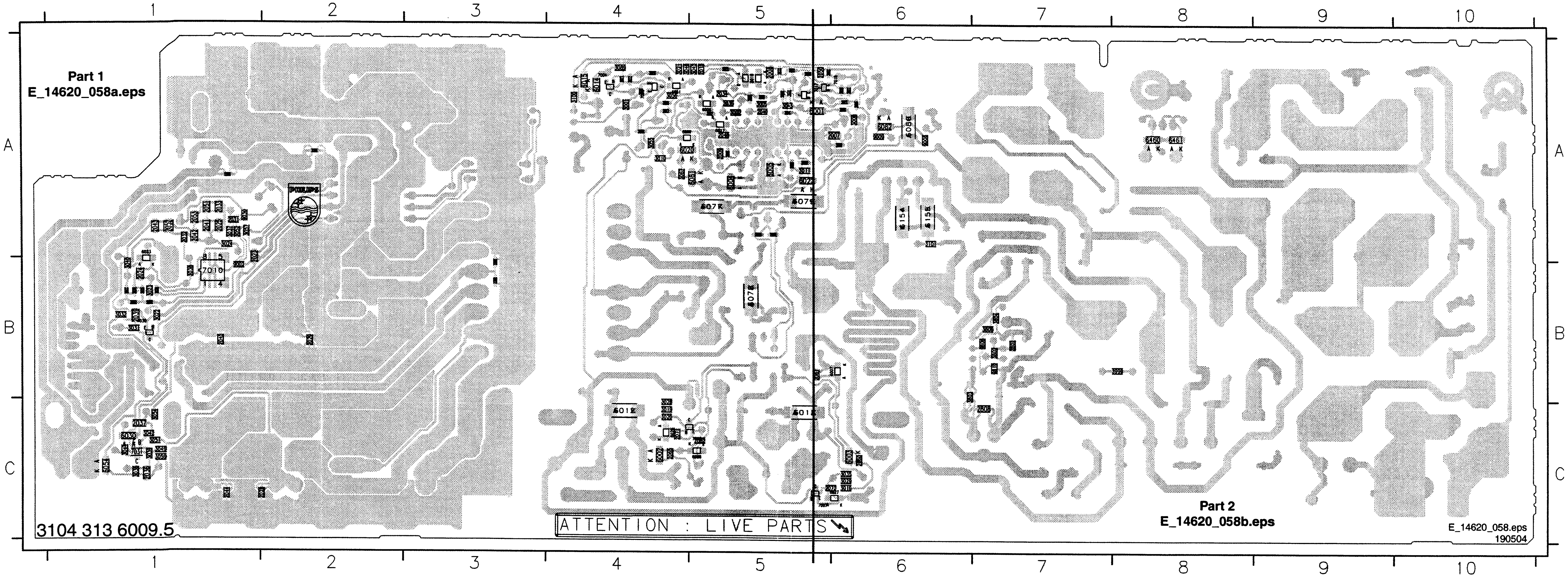
1000	A1
1001	A3
1007	B10
1009	B9
1010	C9
1011	C3
1012	A9
1304	A10
1305	A3
1306	A4
1307	A5
1308	C1
1309	A8
1400	C1
1401	A4
1402	A2
1403	B1
1450	A3
1M02	B10
2000	A7
2002	A7
2003	A6
2004	A6
2005	A6
2010	A7
2011	B7
2012	C7
2013	C6
2014	A7
2017	B6
2020	C8
2021	C8
2022	A8
2038	A9
2292	A10
2294	C10
2400	C2
2401	B1
2404	B1
2406	A3
2407	A3
2408	B3
2503	A4
2803	B3
2804	B4
2806	B4
2809	C4
2810	C4
2815	A3
2816	A5
3000	A5
3014	B6
3015	C5
3017	C7
3018	C7
3026	A9
3033	A6
3050	A5
3053	A5
3058	A5
3400	C2
3401	C2
3402	A1
3403	A1
3404	A2
3405	B1
3450	A2
3451	A3
3800	A4
3805	C4
3807	B4
3810	A4
5001	B6
5002	A7
5004	C6
5005	C6
5007	B6
5008	C5
5009	B7
5010	B6
5013	C7
5015	A6
5016	A6
5017	A5
5025	B9
5026	A9
5027	C9
5028	C9
5040	B6
5041	C7
5291	B10
5292	C10
5293	B10
5401	B2
5402	A1
5403	A3
5804	B4
6021	B9
6025	B10
6044	C10
6045	C10
6291	A9
6293	A10
6506	A4
6807	C3
6808	A4
6809	A4
7001	A6
7002	A8
7005	C6
7006	C7
7805	B4
7806	C4
9001	A3
9003	A3
9004	A7
9005	B3
9006	C10
9007	A8
9010	A10
9011	A8
9012	C8
9013	B8
9014	B1
9016	A7
9017	A5
9018	A6
9019	A6
9020	B7
9021	A6
9022	C3
9023	C3
9024	C6
9025	B7
9026	C8
9027	B9
9028	B9
9031	A9
9032	A9
9033	A9
9034	A10
9035	B8
9036	B9
9037	B8
9038	A9
9039	A9
9040	B9
9041	B9
9042	B10
9043	B10
9044	C9
9045	C9
9046	C9
9047	C10
9080	A7
9081	C2
9086	B10
9087	B9
9088	A10
9090	A10
9091	A9
9092	A7
9093	A7
9098	B3
9808	B5
9811	B5
9812	B4
9813	B5
9814	A5



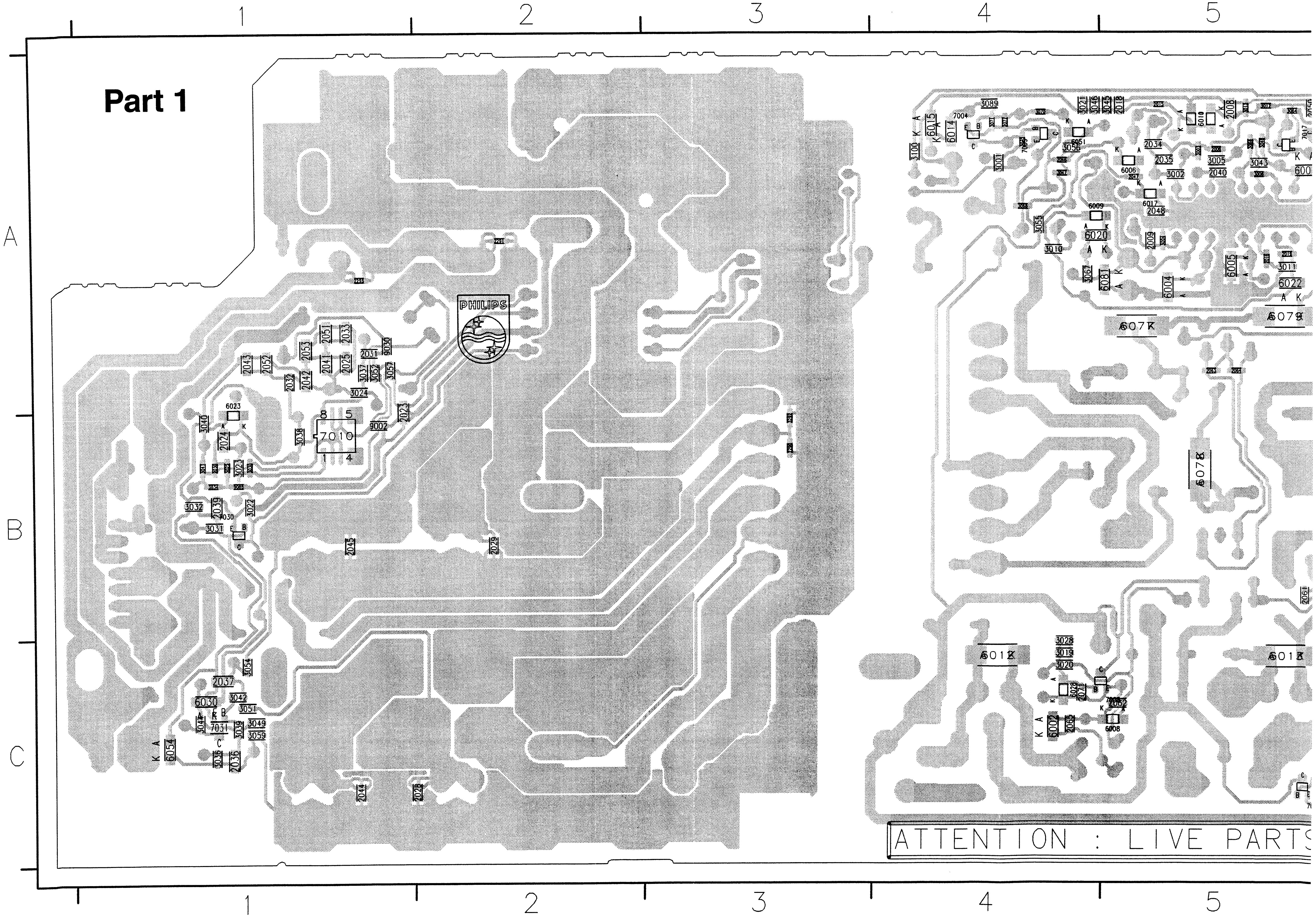
Layout MF Supply Unit (30-32 Inch) (Overview Bottom Side)

2006	A5	2018	A5	2027	A6	2033	A1	2040	A5	2046	A4	2053	A1	2065	C4	2293	A1	3004	A5	3010	A4	3020	C4	3027	A6	3034	B1	3040	B1
2007	A6	2019	A5	2028	C2	2034	A5	2041	A1	2047	A5	2060	C6	2071	C4	2802	B7	3005	A5	3011	A5	3021	A4	3028	C4	3035	C6	3041	B1
2008	A5	2023	B1	2029	B2	2035	A5	2042	A1	2048	A5	2061	B5	2072	C5	2808	C7	3006	A5	3012	A5	3022	B1	3029	C6	3036	C1	3042	C1
2009	A5	2024	B1	2030	B1	2036	C1	2043	A1	2050	A5	2062	C5	2077	A4	3001	A4	3007	A6	3013	A5	3023	B1	3030	B1	3037	A1	3043	A5
2015	A5	2025	A1	2031	A1	2037	C1	2044	C1	2051	A1	2063	A5	2290	B3	3002	A5	3008	A6	3016	C6	3024	A1	3031	B1	3038	B1	3044	C1
2016	A5	2026	A6	2032	A1	2039	B1	2045	B1	2052	A1	2064	A5	2291	A2	3003	A5	3009	A6	3019	C4	3025	B1	3032	B1	3039	C1	3045	A5

3046	A4	3054	C1	3064	A5	3071	A4	3802	B7	6002	C4	6008	C5	6014	A4	6027	C6	6078	B5	6155	A6	7009	A4	9002	B1	9810	B7
3047	A4	3055	A4	3065	A6	3075	A4	3803	B6	6003	C6	6009	A4	6015	A4	6028	C4	6079	A5	6460	A8	7010	A1	9008	A6		
3048	A5	3056	A4	3066	A5	3089	A4	3804	B7	6004	A5	6010	A5	6017	A5	6030	C1	6080	A6	6461	A8	7017	A5	9009	A6		
3049	C1	3057	A1	3067	A4	3100	A4	3806	B7	6005	A5	6011	A5	6020	A4	6051	A4	6081	A4	7004	A4	7018	A6	9030	A1		
3051	C1	3059	C1	3068	A4	3101	A6	3999	B8	6006	A5	6012	B4	6022	A5	6054	C1	6082	A6	7007	C5	7030	B1	9085	B1		
3052	A1	3061	A5	3070	A4	3292	B3	6001	A5	6007	B6	6013	C5	6023	A1	6077	A5	6154	A6	7008	C5	7031	C1	9806	B7		



Lay-out MF Supply Unit (30-32 Inch) (Part 1 Bottom Side)


Part 1
1
2
3
4
5
A
B
C
PHILIPS
7010
8
5
1
4
6023
3040
2024
3038
3002
2023
2043
2052
2032
2042
2053
2041
2051
2025
2033
2031
3030
3032
3052
3059
3024
3023
3022
3032
2039
3031
2045
2028
2037
3054
6030
3042
3051
7031
3049
3059
6054
3038
2036
2044
2026
3089
6015
6014
7004
3100
3001
3056
3021
3046
3045
2018
2034
2035
3002
3005
2040
3043
2008
6006
6017
2048
6009
6020
3055
3010
2009
3062
6081
6004
6005
3011
6022
6079
6077
6078
6012
3028
3019
3020
6002
2065
6008
2061
ATTENTION : LIVE PARTS

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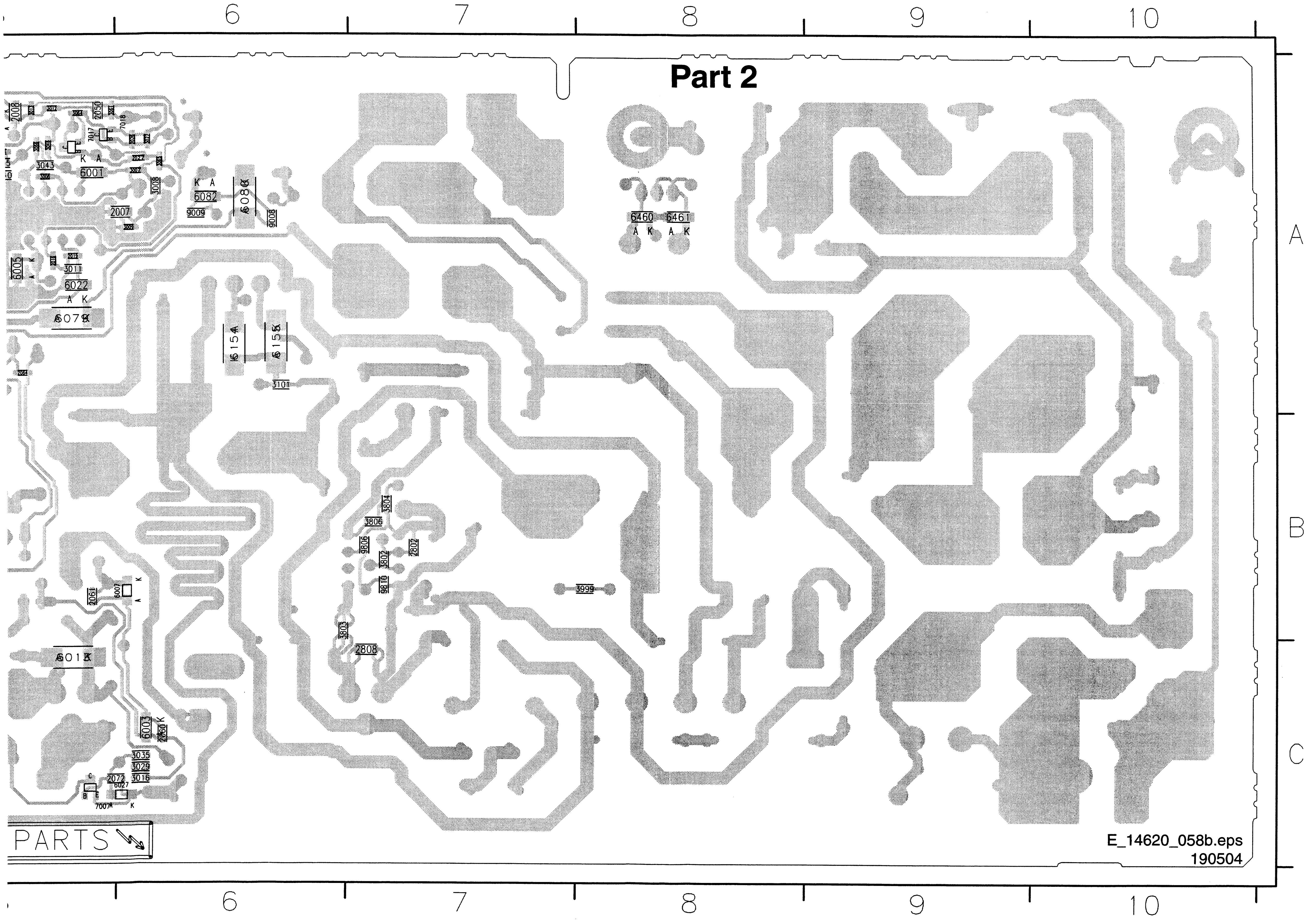
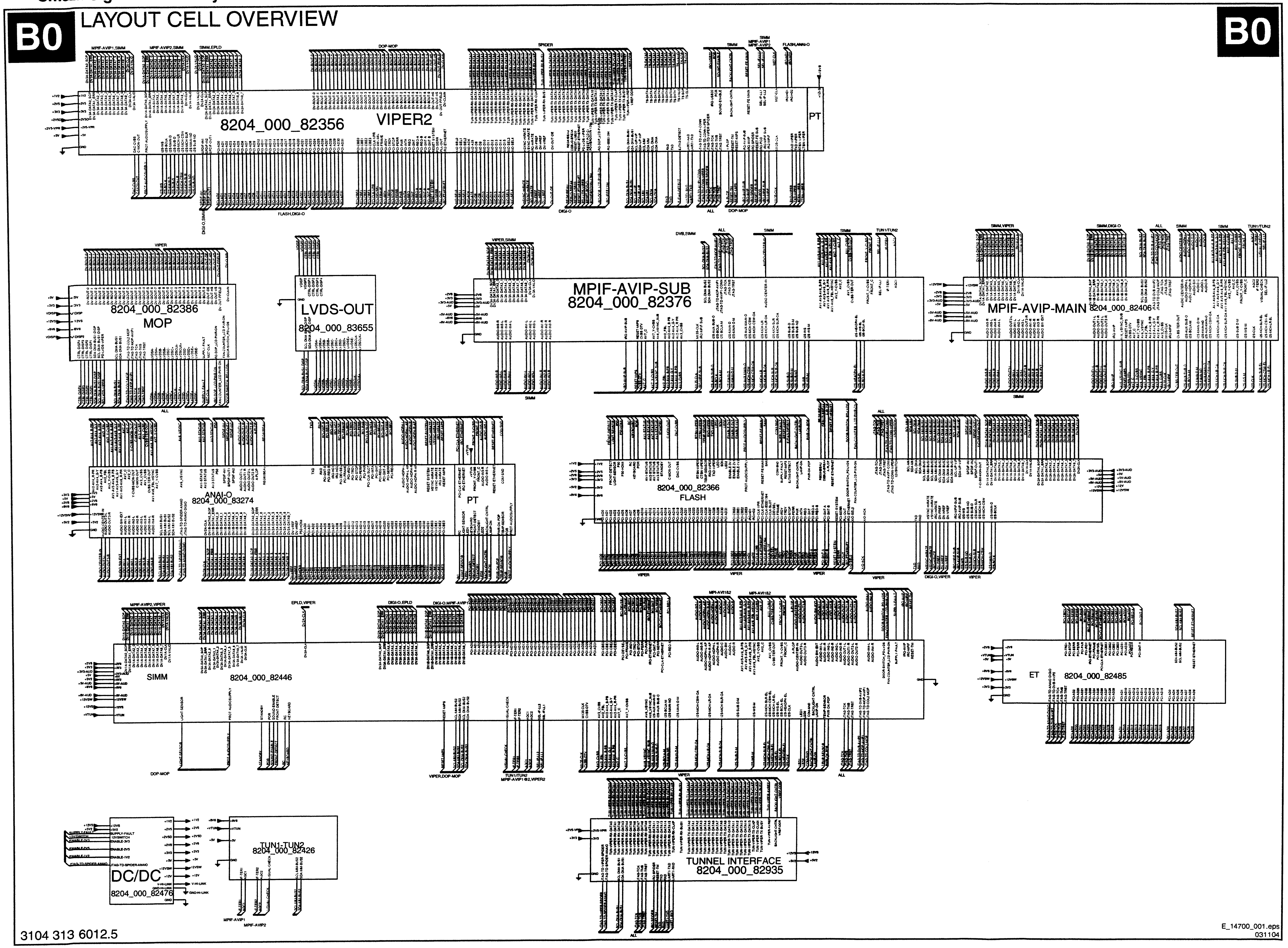
Layout MF Supply Unit (30-32 Inch) (Part 2 Bottom Side)


6
7
8
9
10
A
B
C
Part 2
6001
6082
6080
6460
6461
6005
6022
6079
6154
6155
3101
3806
3804
3802
2802
3810
3999
3803
2808
6017
6003
3035
3029
3016
2072
PARTS
E_14620_058b.eps
190504

Small Signal Board: Layout Cell Overview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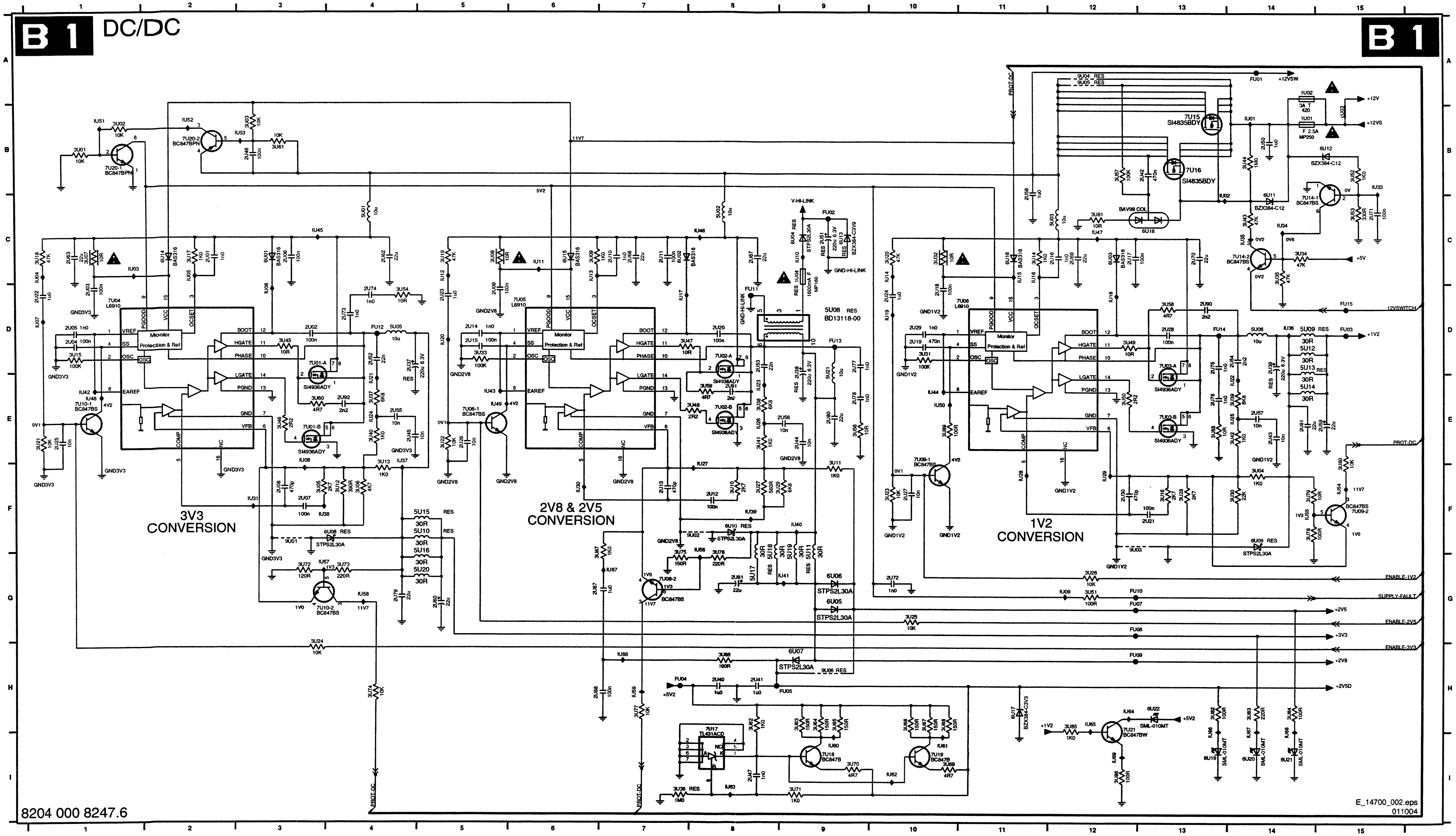
LAYOUT CELL OVERVIEW
B0
8204_000_82356
VIPER2
PT
8204_000_82386
MOP
LVDS-OUT
8204_000_83655
MPIF-AVIP-SUB
8204_000_82376
MPIF-AVIP-MAIN
8204_000_82406
ANAL-O
8204_000_83274
PT
8204_000_82366
FLASH
SIMM
8204_000_82446
ET
8204_000_82485
DC/DC
8204_000_82476
TUN1-TUN2
8204_000_82426
TUNNEL INTERFACE
8204_000_82935
3104 313 6012.5
E_14700_001.eps
031104
]

Small Signal Board: DC/DC

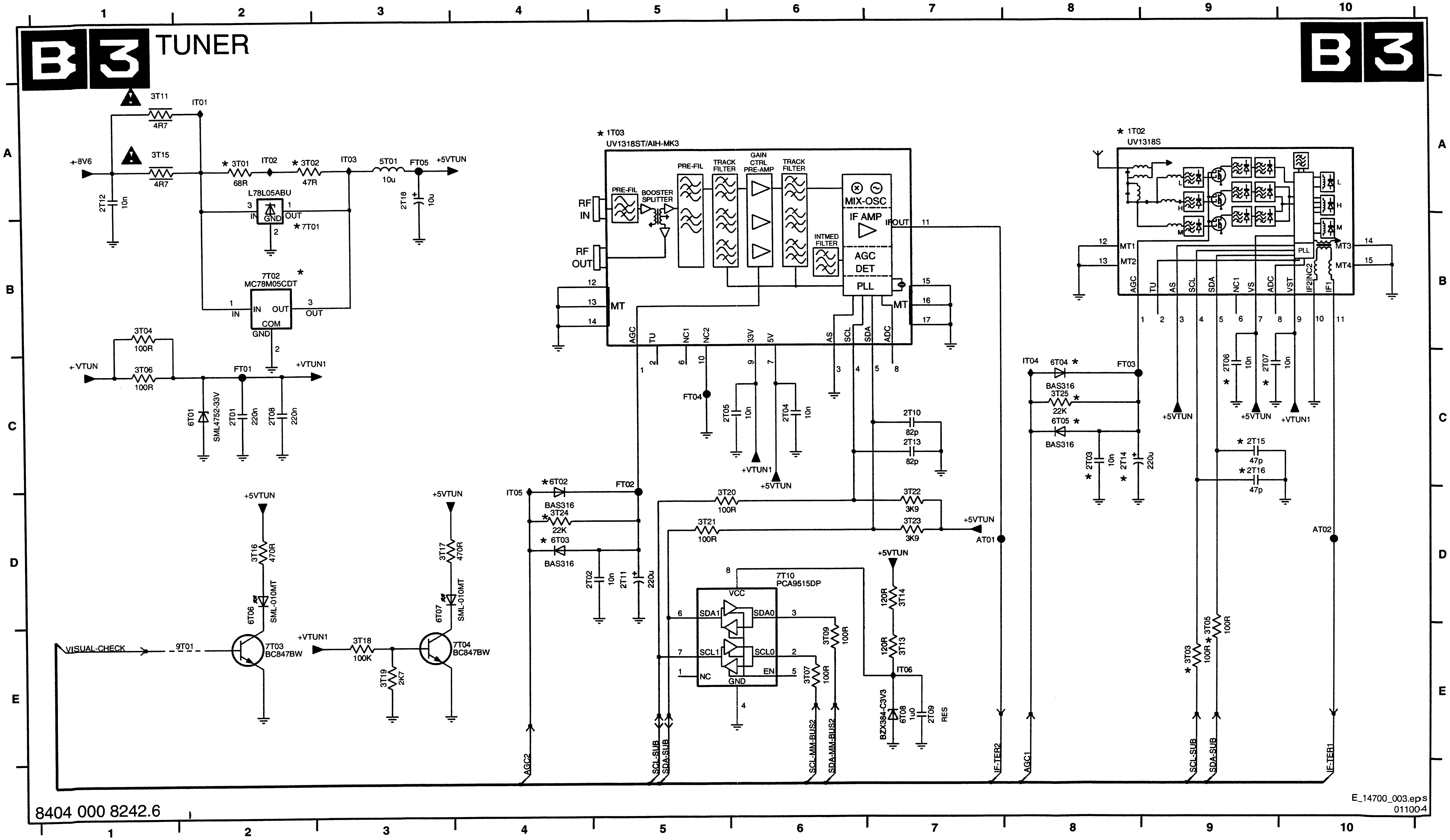
1U01	B14
1U02	A14
1U04	C9
2U01	C2
2U02	D3
2U03	D1
2U04	D1
2U05	D1
2U06	C3
2U07	F3
2U08	F3
2U09	D5
2U10	C7
2U11	C7
2U12	F8
2U13	F7
2U14	D5
2U15	D5
2U16	C12
2U17	C12
2U18	D10
2U19	D10
2U20	D8
2U21	F13
2U22	D1
2U23	D5
2U24	D10
2U25	E1
2U26	E5
2U27	F10
2U28	D13
2U29	D10
2U30	F12
2U37	D4
2U38	D9
2U39	D14
2U40	H8
2U41	H8
2U42	B13
2U43	E14
2U44	E9
2U45	E4
2U46	B3
2U47	I8
2U50	B14
2U51	C9
2U52	D4
2U53	D8
2U54	D14
2U55	E4
2U56	E9
2U57	E14
2U58	B11
2U59	E15
2U60	G5
2U61	G8
2U62	C4
2U63	C1
2U66	C7
2U67	C8
2U69	C12
2U70	C13
2U71	C15
2U72	G10
2U73	D4
2U74	D4
2U75	D13
2U76	E13
2U77	D9
2U78	E9
2U79	G4
2U80	E9
2U81	E14
2U87	G6
2U88	H6
2U90	D13
2U91	E8
2U92	E4
3U01	B1
3U02	B1
3U03	B3
3U04	F14
3U05	F3
3U06	F4
3U07	C1
3U08	C5
3U09	C6
3U10	F8
3U11	F9
3U12	F4
3U13	F4
3U14	C11
3U15	D1
3U16	F13
3U17	C2
3U18	C1
3U19	C5
3U20	C10
3U21	E1
3U22	E5
3U23	F10
3U24	H3
3U25	G10
3U26	G12
3U27	F8
3U28	F13
3U29	F8
3U30	F14
3U31	D10
3U32	C10
3U33	D5
3U34	C14
3U35	C14
3U36	I7
3U37	E4
3U38	E8
3U39	E14
3U40	E4
3U41	E8
3U42	E14
3U43	C14
3U44	B14
3U45	D3
3U46	E3
3U47	D7
3U48	E8
3U49	D12
3U50	E12
3U51	G12
3U52	B15
3U53	C15
3U54	D4
3U55	E13
3U56	E9
3U57	B12
3U58	D13
3U59	E8
3U60	E3
3U61	B3
3U62	H8
3U63	H9
3U64	H9
3U65	H9
3U66	H10
3U67	H10
3U68	H10
3U69	I10
3U70	I9
3U71	I9
3U72	G3
3U73	G4
3U74	H4
3U75	G7
3U76	G8
3U77	H7
3U78	F14
3U79	F14
3U80	E15
3U81	C12
3U82	H13
3U83	H14
3U84	H14
3U85	H12
3U86	I12
3U87	G6
3U88	H8
3U89	E10
5U01	C4
5U02	C8
5U03	C12
5U05	D4
5U06	D14
5U08	D9
5U09	D14
5U10	F5
5U11	F9
5U12	D14
5U13	D14
5U14	E14
5U15	F5
5U16	G5
5U17	G8
5U18	F8
5U19	F9
5U20	G5
5U21	D9
6U01	C3
6U02	C7
6U03	C12
6U04	C9
6U05	G9
6U06	G9
6U07	H9
6U08	F4
6U09	F14
6U10	F8
6U11	C14
6U12	B15
6U13	C9
6U14	C2
6U15	C6
6U16	C11
6U17	H11
6U18	C13
6U19	I13
6U20	I14
6U21	I14
6U22	H13
7U01-A	D3
7U01-B	E3
7U02-A	D8
7U02-B	E8
7U03-A	D13
7U03-B	E13
7U04	D1
7U05	D6
7U06	D11
7U08-1	E5
7U08-2	G7
7U09-1	E10
7U09-2	F15
7U10-1	E1
7U10-2	G3
7U14-1	C15
7U14-2	C14
7U15	B13
7U16	B13
7U17	H8
7U18	I9
7U19	I10
7U20-1	B1
7U20-2	B2
7U21	H12
9U01	F3
9U02	F8
9U03	F12
9U04	A12
9U05	A12
9U06	H9
FU01	A14
FU02	C9
FU03	D15
FU04	H7
FU05	H9
FU07	G12
FU08	G12
FU09	H12
FU10	G12
FU11	D8
FU12	D4
FU13	D9
FU14	D13
FU15	D15
IU01	B14
IU02	C13
IU03	C1
IU04	C1
IU05	C2
IU06	D3
IU07	D1
IU08	E3
IU09	G12
IU10	C9
IU11	C6
IU12	C5
IU13	C6
IU14	C10
IU15	C11
IU16	C11
IU17	D7
IU18	D12
IU19	D10
IU20	D5
IU21	E4
IU22	E14
IU23	E8
IU24	E4
IU25	E14
IU26	E8
IU27	F8
IU28	F11
IU29	F12
IU30	F6
IU31	F3
IU33	B15
IU34	C14
IU35	C14
IU36	D14
IU37	E4
IU38	F3
IU39	F8
IU40	F9
IU41	G9
IU42	E1
IU43	E5
IU44	E10
IU45	C3
IU46	C8
IU47	C12
IU48	E1
IU49	E5
IU50	E10
IU51	B1
IU52	B2
IU53	B3
IU54	F15
IU55	F14
IU56	F8
IU57	G3
IU58	G4
IU59	H7
IU60	I9
IU61	I10
IU62	I10
IU63	I8
IU64	H12
IU65	H12
IU66	H13
IU67	H14
IU68	H14
IU69	I12
IU87	G7
IU88	H7
cU03	B15



B 1
DC/DC
B 1
3V3
CONVERSION
2V8 & 2V5
CONVERSION
1V2
CONVERSION
Monitor
Protection & Ref
VREF
SS
OSC
EAREF
PGOOD
VCC
OCSET
BOOT
HGATE
PHASE
LGATE
PGND
GND
VFB
COMP
NC
L6910
SI4936ADY
SI4835BDY
BC847BPN
BC847BS
BC847B
BC847BW
TL431ACD
BAS316
BAV99 COL
BZX384-C12
BZX384-C3V9
STPS2L30A
BD13118-00
SML-010MT
MP250
MP160
+12V
+12VS
+12VSW
+5V
+5V2
+1V2
+2V5
+3V3
+2V8
+2V5D
12VSWITCH
PROT-DC
ENABLE-1V2
SUPPLY-FAULT
ENABLE-2V5
ENABLE-3V3
V-HI-LINK
GND-HI-LINK
GND3V3
GND2V8
GND1V2
11V7
5V2
RES
8204 000 8247.6
E_14700_002.eps
011004

Small Signal Board: Tuner

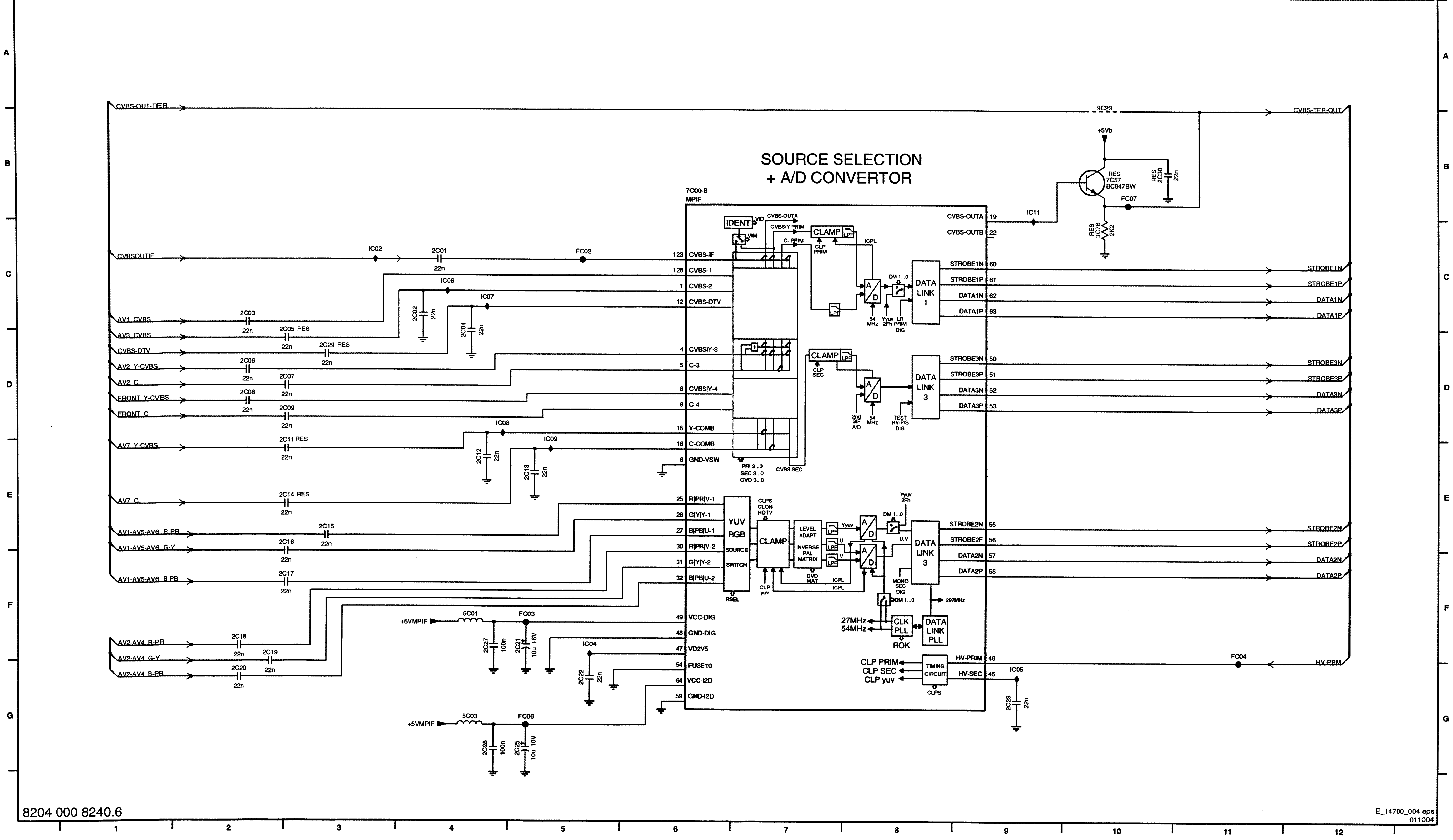
1T02 A8
1T03 A5
2T01 C2
2T02 D4
2T03 C8
2T04 C6
2T05 C5
2T06 C9
2T07 C9
2T08 C2
2T09 E7
2T10 C7
2T11 D5
2T12 A1
2T13 C7
2T14 C8
2T15 C9
2T16 C9
2T18 A3
3T01 A2
3T02 A2
3T03 E9
3T04 B1
3T05 E9
3T06 C1
3T07 E6
3T09 E6
3T11 A1
3T13 E7
3T14 D7
3T15 A1
3T16 D2
3T17 D3
3T18 E3
3T19 E3
3T20 D5
3T21 D5
3T22 D7
3T23 D7
3T24 D4
3T25 C8
5T01 A3
6T01 C2
6T02 C4
6T03 D4
6T04 C8
6T05 C8
6T06 D2
6T07 D3
6T08 E7
7T01 B2
7T02 B2
7T03 E2
7T04 E3
7T10 D6
9T01 E2
AT01 D7
AT02 D10
FT01 C2
FT02 C5
FT03 C8
FT04 C5
FT05 A3
IT01 A2
IT02 A2
IT03 A3
IT04 C8
IT05 D4
IT06 E7


B3 TUNER
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
+8V6
3T11 4R7
3T15 4R7
IT01
2T12 10n
3T01 68R
IT02
3T02 47R
IT03
5T01 10u
FT05
+5VTUN
2T18 10u
L78L05ABU
IN GND OUT
7T01
7T02 MC78M05CDT
IN OUT COM GND
3T04 100R
3T06 100R
+VTUN
FT01
+VTUN1
6T01 SML4752-33V
2T01 220n
2T08 220n
+5VTUN
3T16 470R
6T06 SML-010MT
7T03 BC847BW
VISUAL-CHECK
9T01
+VTUN1
3T18 100K
3T19 2K7
3T17 470R
6T07 SML-010MT
7T04 BC847BW
1T03 UV1318ST/AIH-MK3
RF IN
RF OUT
PRE-FIL
BOOSTER SPLITTER
PRE-FIL
TRACK FILTER
GAIN CTRL PRE-AMP
TRACK FILTER
MIX-OSC
IF AMP
IFOUT
INTMED FILTER
AGC DET
PLL
MT
AGC TU NC1 NC2 33V 5V AS SCL SDA ADC
FT04
2T05 10n
2T04 10n
+VTUN1
+5VTUN
2T10 82p
2T13 82p
IT05
6T02 BAS316
3T24 22K
6T03 BAS316
FT02
2T02 10n
2T11 220u
3T20 100R
3T21 100R
3T22 3K9
3T23 3K9
+5VTUN
AT01
7T10 PCA9515DP
VCC
SDA1 SDA0
SCL1 SCL0
NC EN GND
3T09 100R
3T07 100R
3T14 120R
3T13 120R
IT06
6T08 BZX384-C3V3
2T09 1u0
RES
AGC2
SCL-SUB
SDA-SUB
SCL-MM-BUS2
SDA-MM-BUS2
IF-TER2
1T02 UV1318S
L H M
MT1 MT2 MT3 MT4
PLL
AGC TU AS SCL SDA NC1 VS ADC VST IF2 NC2 IF1
IT04
6T04 BAS316
3T25 22K
6T05 BAS316
FT03
2T03 10n
2T14 220u
+5VTUN
2T06 10n
2T07 10n
+5VTUN
+VTUN1
2T15 47p
2T16 47p
AT02
3T03 100R
3T05 100R
AGC1
SCL-SUB
SDA-SUB
IF-TER1
8404 000 8242.6
E_14700_003.eps 011004

Small Signal Board: MPIF/AVIP Main: Video Sel + Data Link

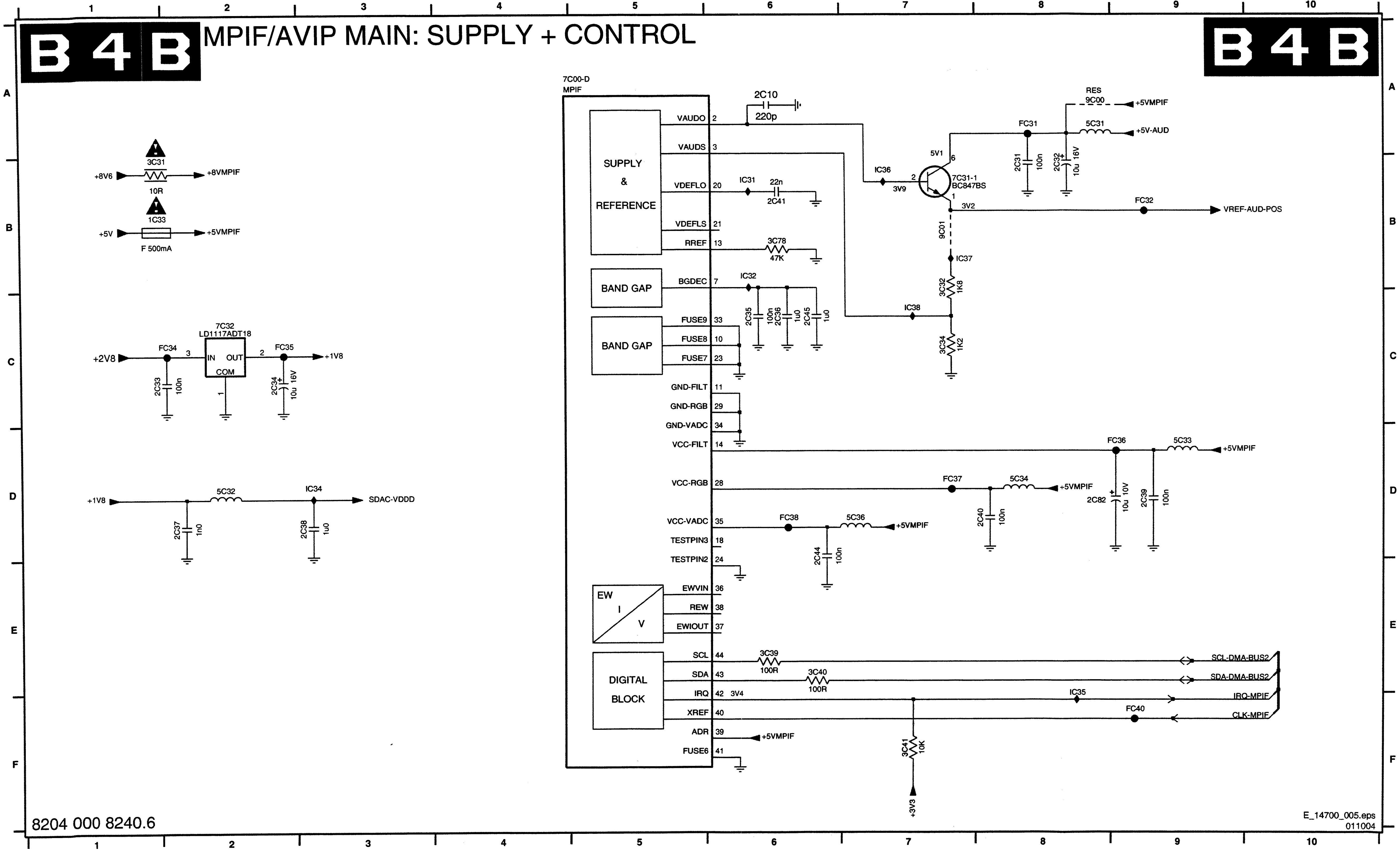
2C01	C4
2C02	C4
2C03	C2
2C04	D4
2C05	D3
2C06	D2
2C07	D3
2C08	D2
2C09	D3
2C11	E3
2C12	E4
2C13	E5
2C14	E3
2C15	E3
2C16	E3
2C17	F3
2C18	F2
2C19	F2
2C20	G2
2C21	F5
2C22	G5
2C23	G9
2C25	G5
2C27	F4
2C28	G4
2C29	D3
2C30	B10
3C76	C10
5C01	F4
5C03	G4
7C00-B	B6
7C57	B10
9C23	B10
FC02	C5
FC03	F5
FC04	F11
FC06	G5
FC07	B10
IC02	C3
IC04	F5
IC05	G9
IC06	C4
IC07	C4
IC08	D4
IC09	D5
IC11	B9

B4A MPIF/AVIP MAIN: VIDEO SEL + DATA LINK



1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
SOURCE SELECTION
+ A/D CONVERTOR
7C00-B
MPIF
CVBS-OUT-TER
9C23
CVBS-TER-OUT
+5Vb
RES
7C57
BC847BW
RES
2C30
22n
FC07
IC11
RES
3C76
2K2
CVBSOUTIF
IC02
2C01
22n
FC02
IC06
IC07
2C02
22n
2C04
22n
AV1_CVBS
2C03
22n
AV3_CVBS
2C05 RES
22n
CVBS-DTV
2C29 RES
22n
AV2_Y-CVBS
2C06
22n
AV2_C
2C07
22n
FRONT_Y-CVBS
2C08
22n
FRONT_C
2C09
22n
AV7_Y-CVBS
2C11 RES
22n
IC08
IC09
2C12
22n
2C13
22n
AV7_C
2C14 RES
22n
AV1-AV5-AV6_R-PR
2C15
22n
AV1-AV5-AV6_G-Y
2C16
22n
AV1-AV5-AV6_B-PB
2C17
22n
AV2-AV4_R-PR
2C18
22n
AV2-AV4_G-Y
2C19
22n
AV2-AV4_B-PB
2C20
22n
+5VMPIF
5C01
FC03
2C27
100n
2C21
10u 16V
IC04
2C22
22n
+5VMPIF
5C03
FC06
2C28
100n
2C25
10u 10V
123 CVBS-IF
126 CVBS-1
1 CVBS-2
12 CVBS-DTV
4 CVBS|Y-3
5 C-3
8 CVBS|Y-4
9 C-4
15 Y-COMB
16 C-COMB
6 GND-VSW
25 R|PR|V-1
26 G|Y|Y-1
27 B|PB|U-1
30 R|PR|V-2
31 G|Y|Y-2
32 B|PB|U-2
49 VCC-DIG
48 GND-DIG
47 VD2V5
54 FUSE10
64 VCC-I2D
59 GND-I2D
IDENT
VID
VIM
CVBS-OUTA
CVBS/Y PRIM
C- PRIM
CLAMP
LPF
CLP PRIM
ICPL
LPF
A/D
DM 1...0
54 MHz
Yyuv 2Fh
LR PRIM DIG
DATA LINK 1
CVBS-OUTA 19
CVBS-OUTB 22
STROBE1N 60
STROBE1P 61
DATA1N 62
DATA1P 63
CLAMP
LPF
CLP SEC
A/D
2nd SIF A/D
54 MHz
TEST HV-P/S DIG
DATA LINK 3
STROBE3N 50
STROBE3P 51
DATA3N 52
DATA3P 53
PRI 3...0
SEC 3...0
CVO 3...0
CVBS SEC
YUV RGB SOURCE SWITCH
RSEL
CLPS CLON HDTV
CLAMP
CLP yuv
LEVEL ADAPT INVERSE PAL MATRIX
DVD MAT
LPF
Yyuv
U
V
ICPL
ICPL
A/D
A/D
Yyuv 2Fh
DM 1...0
U,V
MONO SEC DIG
DATA LINK 3
DM 1...0
297MHz
STROBE2N 55
STROBE2F 56
DATA2N 57
DATA2P 58
27MHz
54MHz
CLK PLL
ROK
DATA LINK PLL
CLP PRIM
CLP SEC
CLP yuv
TIMING CIRCUIT
CLPS
HV-PRIM 46
HV-SEC 45
IC05
2C23
22n
FC04
HV-PRIM
STROBE1N
STROBE1P
DATA1N
DATA1P
STROBE3N
STROBE3P
DATA3N
DATA3P
STROBE2N
STROBE2P
DATA2N
DATA2P
8204 000 8240.6
E_14700_004.eps
011004

Small Signal Board: MPIF/AVIP Main: Supply + Control

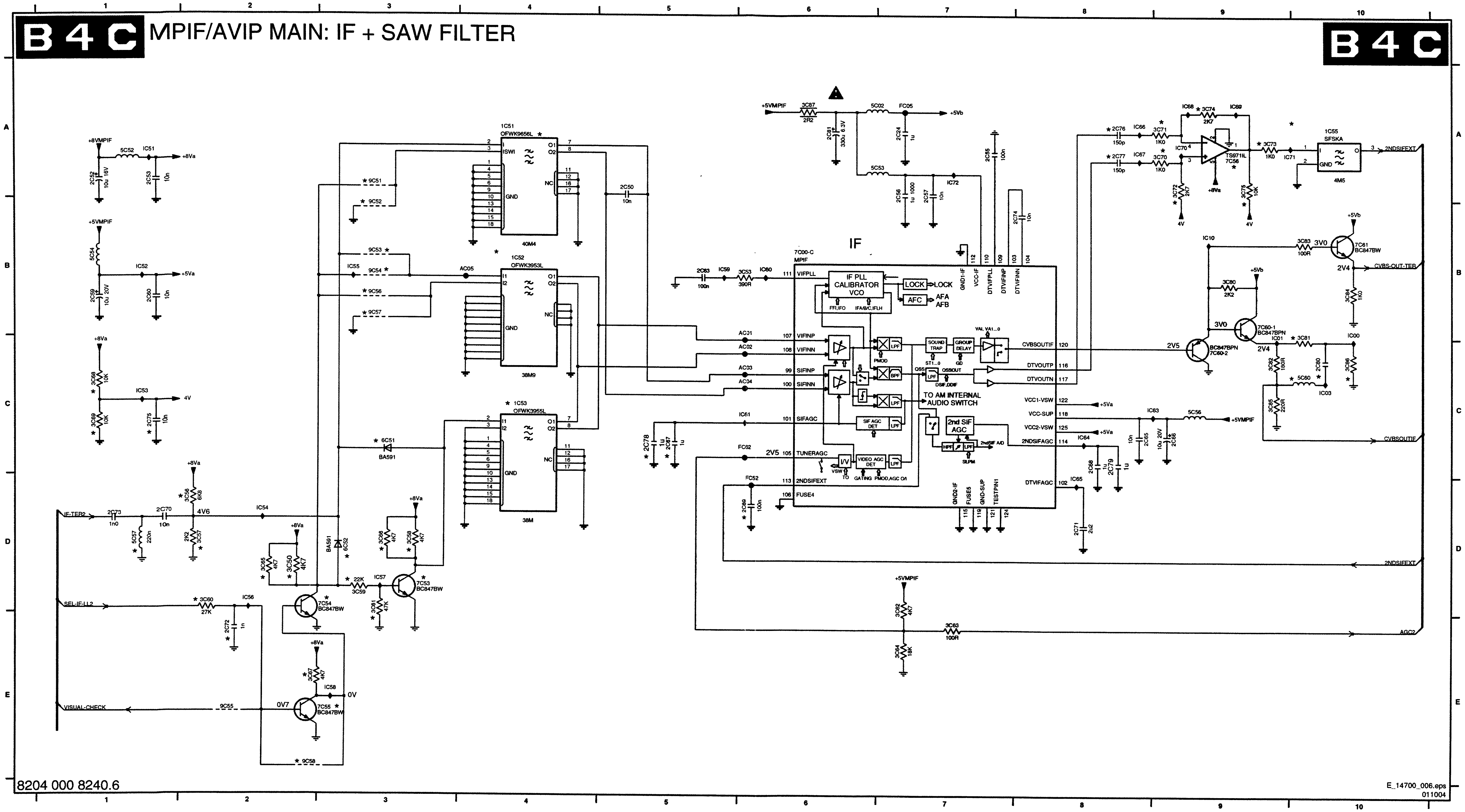

B4B
MPIF/AVIP MAIN: SUPPLY + CONTROL
B4B
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
3C31
10R
+8V6
+8VMPIF
1C33
F 500mA
+5V
+5VMPIF
7C32
LD1117ADT18
+2V8
FC34
IN
OUT
COM
FC35
+1V8
2C33
100n
2C34
10u 16V
+1V8
5C32
IC34
SDAC-VDDD
2C37
1n0
2C38
1u0
7C00-D
MPIF
SUPPLY & REFERENCE
BAND GAP
BAND GAP
EW I V
DIGITAL BLOCK
VAUDO 2
VAUDS 3
VDEFLO 20
VDEFLS 21
RREF 13
BGDEC 7
FUSE9 33
FUSE8 10
FUSE7 23
GND-FILT 11
GND-RGB 29
GND-VADC 34
VCC-FILT 14
VCC-RGB 28
VCC-VADC 35
TESTPIN3 18
TESTPIN2 24
EWVIN 36
REW 38
EWIOUT 37
SCL 44
SDA 43
IRQ 42
XREF 40
ADR 39
FUSE6 41
2C10
220p
IC31
22n
2C41
3C78
47K
IC32
2C35
100n
2C36
1u0
2C45
1u0
IC36
3V9
5V1
7C31-1
BC847BS
3V2
9C01
IC37
3C32
1K8
IC38
3C34
1K2
RES
9C00
+5VMPIF
FC31
5C31
+5V-AUD
2C31
100n
2C32
10u 16V
FC32
VREF-AUD-POS
FC36
5C33
+5VMPIF
FC37
5C34
+5VMPIF
2C82
10u 10V
2C39
100n
2C40
100n
FC38
5C36
+5VMPIF
2C44
100n
3C39
100R
3C40
100R
3V4
IC35
FC40
SCL-DMA-BUS2
SDA-DMA-BUS2
IRQ-MPIF
CLK-MPIF
+5VMPIF
3C41
10K
+3V3
8204 000 8240.6
E_14700_005.eps
011004

1C33	B1
2C10	A6
2C31	B8
2C32	B8
2C33	C1
2C34	C2
2C35	C6
2C36	C6
2C37	D2
2C38	D3
2C39	D9
2C40	D8
2C41	B6
2C44	D6
2C45	C6
2C82	D8
3C31	B1
3C32	B7
3C34	C7
3C39	E6
3C40	E6
3C41	F7
3C78	B6
5C31	A8
5C32	D2
5C33	D9
5C34	D8
5C36	D7
7C00-D	A4
7C31-1	B7
7C32	C2
9C00	A8
9C01	B7
FC31	A8
FC32	B9
FC34	C2
FC35	C2
FC36	D9
FC37	D7
FC38	D6
FC40	F9
IC31	B6
IC32	B6
IC34	D3
IC35	F8
IC36	B7
IC37	B7
IC38	C7

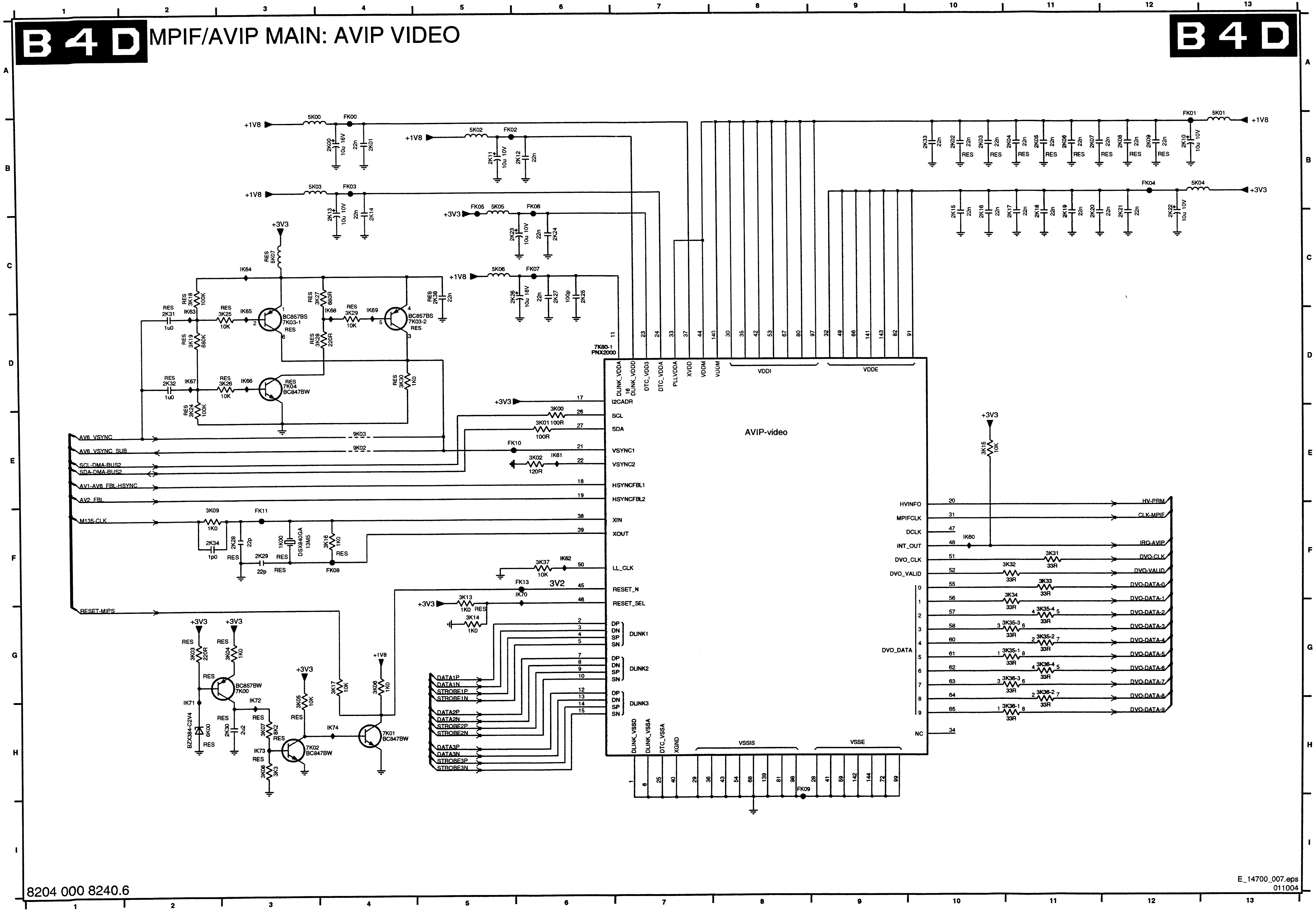
Small Signal Board: MPIF/AVIP Main: IF + SAW Filter

1C51 A4
1C52 B4
1C53 C4
1C55 A10
2C24 A7
2C50 A5
2C52 A1
2C53 A1
2C55 A7
2C56 A7
2C57 A7
2C59 B1
2C60 B1
2C63 B5
2C65 C8
2C66 C9
2C67 C5
2C68 C8
2C69 D6
2C70 D1
2C71 D8
2C72 E2
2C73 D1
2C74 B8
2C75 C1
2C76 A8
2C77 A8
2C78 C5
2C79 C8
2C80 C10
2C81 A6
3C50 D2
3C53 B6
3C56 D2
3C57 D2
3C58 D3
3C59 D3
3C60 D2
3C61 D3
3C62 D7
3C63 E7
3C64 E7
3C65 D2
3C66 D3
3C67 E2
3C68 C1
3C69 C1
3C70 A9
3C71 A9
3C72 A9
3C73 A9
3C74 A9
3C75 A9
3C80 B9
3C81 B10
3C82 C9
3C83 B10
3C84 B10
3C85 C9
3C86 C10
3C87 A6
5C02 A6
5C52 A1
5C53 A6
5C54 B1
5C56 C9
5C57 D1
5C60 C10
6C51 C3
6C52 D3
7C00-C B6
7C53 D3
7C54 D3
7C55 E3
7C56 A9
7C60-1 B9
7C60-2 C9
7C61 B10
9C51 A3
9C52 B3
9C53 B3
9C54 B3
9C55 E2
9C56 B3
9C57 B3
9C58 E2
AC01 B6
AC02 C6
AC03 C6
AC04 C6
AC05 B4
FC05 A7
FC52 D6
FC62 C6
IC00 B10
IC01 B9
IC03 C10
IC10 B9
IC51 A1
IC52 B1
IC53 C1
IC54 D2
IC55 B3
IC56 D2
IC57 D3
IC58 E3
IC59 B5
IC60 B6
IC61 C6
IC63 C8
IC64 C8
IC65 D8
IC66 A8
IC67 A8
IC68 A9
IC69 A9
IC70 A9
IC71 A9
IC72 A7

B 4 C MPIF/AVIP MAIN: IF + SAW FILTER

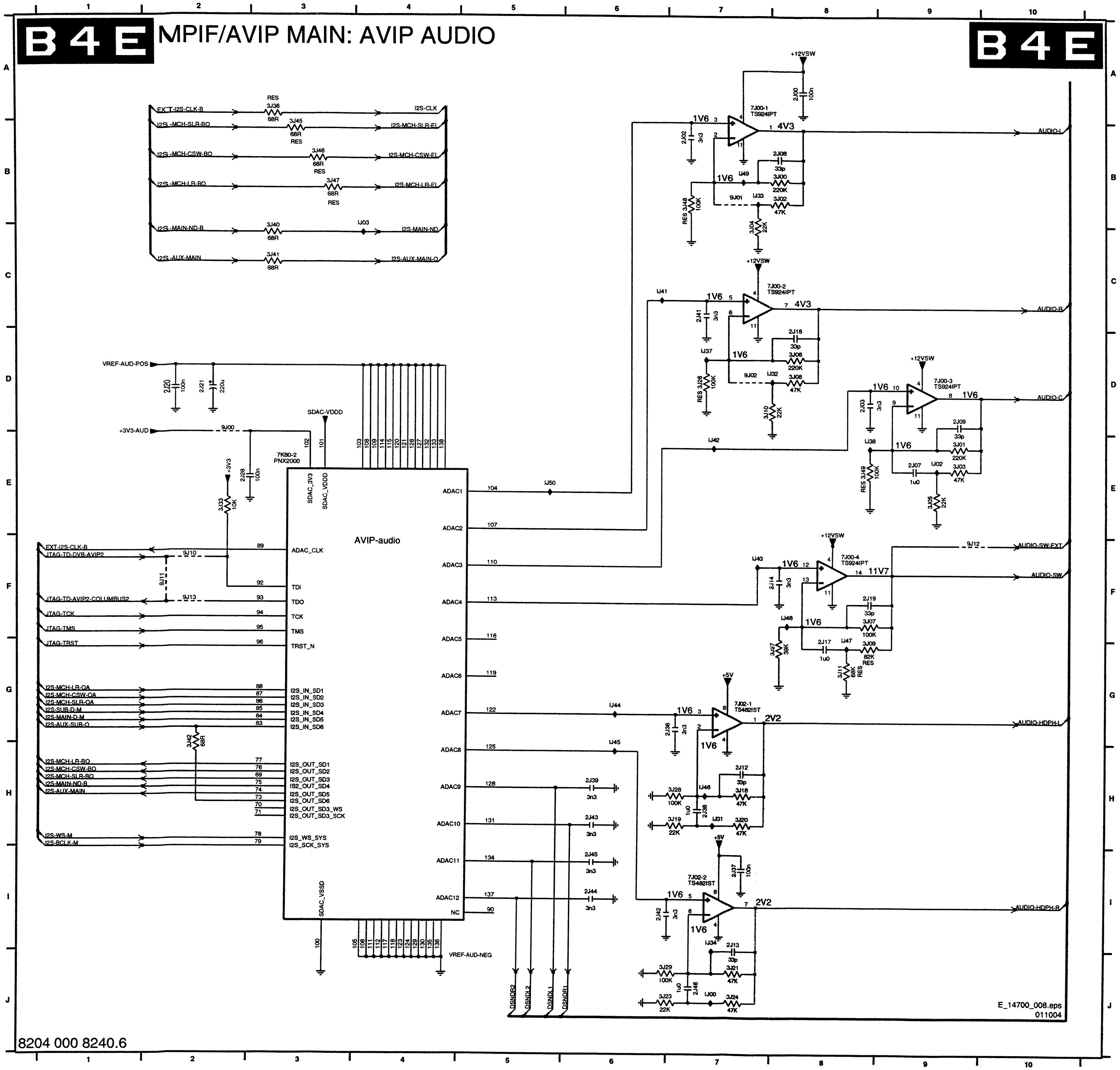

B 4 C
1C51
OFWK9656L
40M4
1C52
OFWK3953L
38M9
1C53
OFWK3955L
38M
7C00-C
MPIF
IF
IF PLL
CALIBRATOR
VCO
LOCK
AFA
AFB
TO AM INTERNAL
AUDIO SWITCH
SOUND TRAP
GROUP DELAY
SIF AGC DET
VIDEO AGC DET
2nd SIF AGC
VIFPLL
VIFINP
VIFINN
SIFINP
SIFINN
SIFAGC
TUNERAGC
2NDSIFEXT
FUSE4
CVBSOUTIF
DTVOUTP
DTVOUTN
VCC1-VSW
VCC-SUP
VCC2-VSW
2NDSIFAGC
DTVIFAGC
+5VMPIF
+8VMPIF
+8Va
+5Va
+5Vb
4V
4V6
2V5
2V4
3V0
0V7
0V
1C55
SFSKA
4M5
TS971IL
7C56
7C61
BC847BW
7C60-1
BC847BPN
7C60-2
7C53
7C54
7C55
BA591
6C51
6C52
IF-TER2
SEL-IF-LL2
VISUAL-CHECK
2NDSIFEXT
CVBS-OUT-TER
CVBSOUTIF
AGC2
8204 000 8240.6
E_14700_006.eps
011004

Small Signal Board: MPIF/AVIP Main: AVIP Video


B4D
MPIF/AVIP MAIN: AVIP VIDEO
B4D
AVIP-video
7K80-1
PNX2000
+1V8
+3V3
5K00
FK00
5K01
FK01
5K02
FK02
5K03
FK03
5K04
FK04
5K05
FK05
5K06
FK06
FK07
5K07
BC857BS
7K03-1
7K03-2
BC847BW
7K04
7K00
BC857BW
7K01
7K02
BZX384-C2V4
6K00
DSX840GA
13M5
1K00
DLINK_VDDA
DLINK_VDDD
DTC_VDD3
DTC_VDDA
PLLVDDA
XVDD
VDDM
VUUM
VDDI
VDDE
I2CADR
SCL
SDA
VSYNC1
VSYNC2
HSYNCFBL1
HSYNCFBL2
XIN
XOUT
LL_CLK
RESET_N
RESET_SEL
DP
DN
SP
SN
DLINK1
DLINK2
DLINK3
HVINFO
MPIFCLK
DCLK
INT_OUT
DVO_CLK
DVO_VALID
DVO_DATA
NC
DLINK_VSSD
DLINK_VSSA
DTC_VSSA
XGND
VSSIS
VSSE
AV6_VSYNC
AV6_VSYNC_SUB
SCL-DMA-BUS2
SDA-DMA-BUS2
AV1-AV6_FBL-HSYNC
AV2_FBL
M135-CLK
RESET-MIPS
DATA1P
DATA1N
STROBE1P
STROBE1N
DATA2P
DATA2N
STROBE2P
STROBE2N
DATA3P
DATA3N
STROBE3P
STROBE3N
HV-PRM
CLK-MPIF
IRQ-AVIP
DVO-CLK
DVO-VALID
DVO-DATA-0
DVO-DATA-1
DVO-DATA-2
DVO-DATA-3
DVO-DATA-4
DVO-DATA-5
DVO-DATA-6
DVO-DATA-7
DVO-DATA-8
DVO-DATA-9
9K02
9K03
FK08
FK09
FK10
FK11
FK13
3V2
RES
8204 000 8240.6
E_14700_007.eps
011004

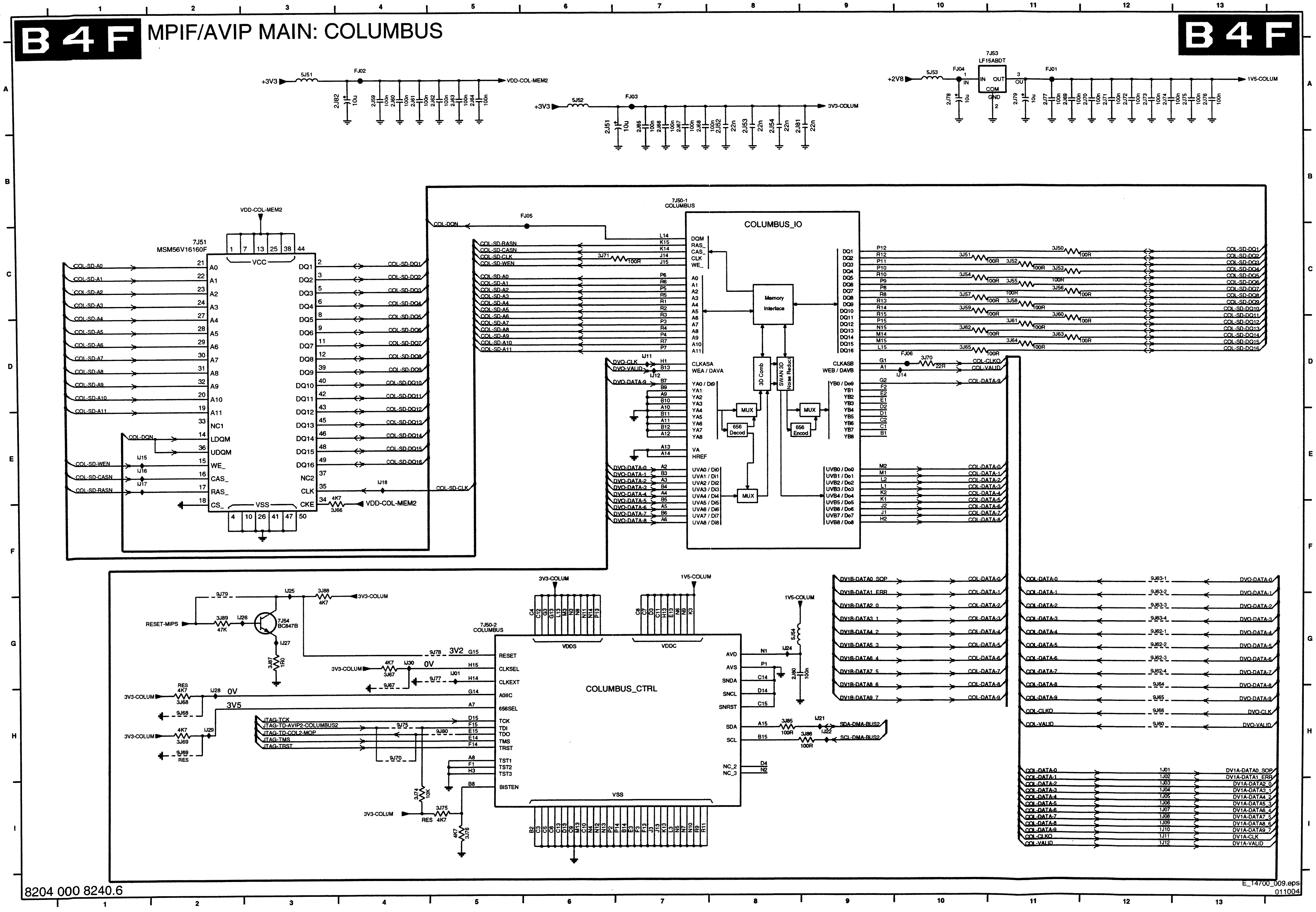
1K00	F3
2K00	B4
2K01	B4
2K02	B10
2K03	B10
2K04	B11
2K05	B11
2K06	B11
2K07	B11
2K08	B12
2K09	B12
2K10	B12
2K11	B5
2K12	B6
2K13	C4
2K14	C4
2K15	C10
2K16	C10
2K17	C11
2K18	C11
2K19	C11
2K20	C11
2K21	C12
2K22	C12
2K23	C6
2K24	C6
2K25	C6
2K26	C6
2K27	C6
2K28	F3
2K29	F3
2K30	H3
2K31	D2
2K32	D2
2K33	B10
2K34	F2
2K38	C5
3K00	E6
3K01	E6
3K02	E6
3K03	G2
3K04	G3
3K05	H3
3K06	G4
3K07	H3
3K08	H3
3K09	F2
3K13	F5
3K14	G5
3K15	E10
3K16	F4
3K17	G4
3K18	C2
3K19	D2
3K24	E2
3K25	D3
3K26	D3
3K27	C4
3K28	D4
3K29	D4
3K30	D4
3K31	F11
3K32	F11
3K33	F11
3K34	F11
3K35-1	G11
3K35-2	G11
3K35-3	G11
3K35-4	G11
3K36-1	H11
3K36-2	G11
3K36-3	G11
3K36-4	G11
3K37	F6
5K00	B3
5K01	B13
5K02	B5
5K03	B3
5K04	B12
5K05	B5
5K06	C5
5K07	C3
6K00	H2
7K00	G3
7K01	H4
7K02	H3
7K03-1	D3
7K03-2	D4
7K04	D3
7K80-1	D6
9K02	E4
9K03	E4
FK00	B4
FK01	B12
FK02	B5
FK03	B4
FK04	B12
FK05	B5
FK06	B6
FK07	C6
FK08	F4
FK09	H8
FK10	E5
FK11	F3
FK13	F6
IK60	F10
IK61	E6
IK62	F6
IK63	C2
IK64	C3
IK65	C3
IK66	D3
IK67	D2
IK68	C4
IK69	C4
IK70	F6
IK71	H2
IK72	G3
IK73	H3
IK74	H4

Small Signal Board: MPIF/AVIP Main: AVIP Audio


B4E
MPIF/AVIP MAIN: AVIP AUDIO
B4E
EXT-I2S-CLK-B
I2S-MCH-SLR-BO
I2S-MCH-CSW-BO
I2S-MCH-LR-BO
I2S-MAIN-ND-B
I2S-AUX-MAIN
I2S-CLK
I2S-MCH-SLR-EL
I2S-MCH-CSW-EL
I2S-MCH-LR-EL
I2S-MAIN-ND
I2S-AUX-MAIN-O
3J36 68R RES
3J45 68R RES
3J46 68R RES
3J47 68R RES
3J40 68R
3J41 68R
IJ03
VREF-AUD-POS
2J20 100n
2J21 220u
+3V3-AUD
9J00
SDAC-VDDD
7K80-2 PNX2000
AVIP-audio
ADAC_CLK
TDI
TDO
TCK
TMS
TRST_N
I2S_IN_SD1
I2S_IN_SD2
I2S_IN_SD3
I2S_IN_SD4
I2S_IN_SD5
I2S_IN_SD6
I2S_OUT_SD1
I2S_OUT_SD2
I2S_OUT_SD3
I2S_OUT_SD4
I2S_OUT_SD5
I2S_OUT_SD6
I2S_OUT_SD3_WS
I2S_OUT_SD3_SCK
I2S_WS_SYS
I2S_SCK_SYS
SDAC_3V3
SDAC_VDDD
SDAC_VSSD
ADAC1
ADAC2
ADAC3
ADAC4
ADAC5
ADAC6
ADAC7
ADAC8
ADAC9
ADAC10
ADAC11
ADAC12
NC
VREF-AUD-NEG
EXT-I2S-CLK-B
JTAG-TD-DVB-AVIP2
JTAG-TD-AVIP2-COLUMBUS2
JTAG-TCK
JTAG-TMS
JTAG-TRST
9J10
9J11
9J13
3J33 10K
2J26 100n
I2S-MCH-LR-OA
I2S-MCH-CSW-OA
I2S-MCH-SLR-OA
I2S-SUB-D-M
I2S-MAIN-D-M
I2S-AUX-SUB-O
3J42 68R
I2S-MCH-LR-BO
I2S-MCH-CSW-BO
I2S-MCH-SLR-BO
I2S-MAIN-ND-B
I2S-AUX-MAIN
I2S-WS-M
I2S-BCLK-M
+12VSW
2J00 100n
7J00-1 TS924IPT
1V6
4V3
2J02 3n3
2J08 33p
3J00 220K
3J02 47K
IJ49
9J01
IJ33
RES 3J48 100K
3J04 22K
AUDIO-L
IJ41
7J00-2 TS924IPT
2J41 3n3
2J18 33p
3J06 220K
3J08 47K
IJ37
9J02
IJ32
RES 3J26 100K
3J10 22K
AUDIO-R
7J00-3 TS924IPT
2J03 3n3
2J09 33p
3J01 220K
3J03 47K
2J07 1u0
IJ02
IJ38
IJ42
RES 3J49 100K
3J05 22K
AUDIO-C
IJ50
9J12
AUDIO-SW-EXT
7J00-4 TS924IPT
11V7
IJ43
2J14 3n3
AUDIO-SW
2J19 33p
3J07 100K
2J17 1u0
IJ47
IJ48
3J09 82K RES
3J27 39K
3J11 68K RES
+5V
7J02-1 TS482IST
2V2
IJ44
2J36 3n3
AUDIO-HDPH-L
IJ45
2J12 33p
3J18 47K
3J28 100K
IJ46
2J38 1u0
3J19 22K
IJ31
3J20 47K
2J39 3n3
2J43 3n3
2J45 3n3
2J44 3n3
7J02-2 TS482IST
2J37 100n
2J42 3n3
AUDIO-HDPH-R
IJ34
2J13 33p
3J21 47K
3J29 100K
2J46 1u0
3J23 22K
IJ00
3J24 47K
DSNDR2
DSNDL2
DSNDL1
DSNDR1
E_14700_008.eps
011004
8204 000 8240.6
1 2 3 4 5 6 7 8 9 10
A B C D E F G H I J

2J00	A8
2J02	B7
2J03	D8
2J07	E9
2J08	B8
2J09	D9
2J12	H7
2J13	I7
2J14	F8
2J17	G8
2J18	D8
2J19	F8
2J20	D2
2J21	D2
2J26	E2
2J36	G7
2J37	I7
2J38	H7
2J39	H6
2J41	C7
2J42	I6
2J43	H6
2J44	I6
2J45	I6
2J46	J7
3J00	B8
3J01	E9
3J02	B8
3J03	E9
3J04	C7
3J05	E9
3J06	D8
3J07	F8
3J08	D8
3J09	G8
3J10	D7
3J11	G8
3J18	H7
3J19	H7
3J20	H7
3J21	J7
3J23	J6
3J24	J7
3J26	D7
3J27	G8
3J28	H7
3J29	J6
3J33	E2
3J36	A3
3J40	C3
3J41	C3
3J42	H2
3J45	B3
3J46	B3
3J47	B3
3J48	B7
3J49	E8
7J00-1	A7
7J00-2	C7
7J00-3	D9
7J00-4	F8
7J02-1	G7
7J02-2	I7
7K80-2	E3
9J00	D2
9J01	B7
9J02	D7
9J10	F2
9J11	F2
9J12	F9
9J13	F2
IJ00	J7
IJ02	E9
IJ03	B4
IJ31	H7
IJ32	D7
IJ33	B7
IJ34	I7
IJ37	D7
IJ38	E8
IJ41	C6
IJ42	E7
IJ43	F7
IJ44	G6
IJ45	G6
IJ46	H7
IJ47	F8
IJ48	F8
IJ49	B7
IJ50	E5

Small Signal Board: MPIF/AVIP Main: Columbus


B4F
MPIF/AVIP MAIN: COLUMBUS
B4F
7J51
MSM56V16160F
7J50-1
COLUMBUS
COLUMBUS_IO
Memory Interface
3D Comb
SWAN 3D Noise Reduc
MUX
656 Decod
656 Encod
7J50-2
COLUMBUS
COLUMBUS_CTRL
VDDS
VDDC
VSS
7J53
LF15ABDT
7J54
BC847B
+3V3
+2V8
VDD-COL-MEM2
3V3-COLUM
1V5-COLUM
RESET-MIPS
SDA-DMA-BUS2
SCL-DMA-BUS2
8204 000 8240.6
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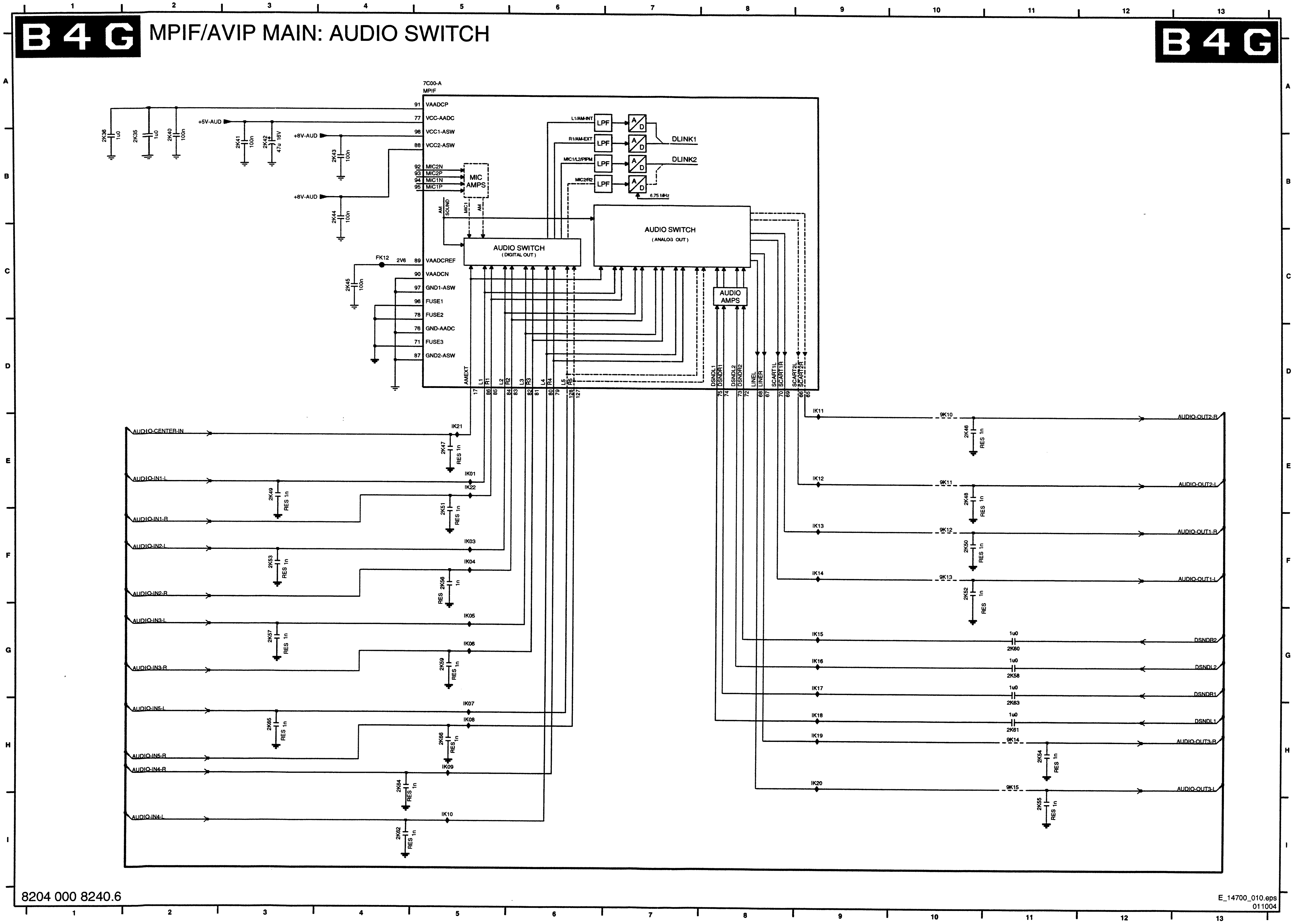
011004

1J01	H12
1J02	I12
1J03	I12
1J04	I12
1J05	I12
1J06	I12
1J07	I12
1J08	I12
1J09	I12
1J10	I12
1J11	I12
1J12	I12
2J51	A6
2J52	A8
2J53	A8
2J54	A8
2J59	A4
2J60	A4
2J61	A4
2J62	A5
2J63	A5
2J64	A5
2J65	A7
2J66	A7
2J67	A7
2J68	A7
2J69	A11
2J70	A12
2J71	A12
2J72	A12
2J73	A12
2J74	A12
2J75	A13
2J76	A13
2J77	A11
2J78	A10
2J79	A11
2J80	G8
2J81	A8
2J82	A4
3J50	C11
3J51	C10
3J52	C11
3J53	C11
3J54	C10
3J55	C11
3J56	C11
3J57	C10
3J58	C11
3J59	C10
3J60	D11
3J61	D11
3J62	D10
3J63	D11
3J64	D11
3J65	D10
3J66	F3
3J67	G4
3J68	H2
3J69	H2
3J70	D10
3J71	C6
3J74	I4
3J75	I5
3J76	I5
3J85	H8
3J86	H9
3J87	G3
3J88	F3
3J89	G2
5J51	A3
5J52	A6
5J53	A10
5J54	G8
7J50-1	B7
7J50-2	G5
7J51	C2
7J53	A11
7J54	G3
9J60	H12
9J62-1	G12
9J62-2	G12
9J62-3	G12
9J62-4	G12
9J63-1	F12
9J63-2	G12
9J63-3	G12
9J63-4	G12
9J64	H12
9J65	H12
9J66	H12
9J67	H4
9J68	H2
9J69	H2
9J70	H4
9J75	H4
9J77	G5
9J78	G5
9J79	G2
9J80	H5
FJ01	A11
FJ02	A4
FJ03	A7
FJ04	A10
FJ05	B6
FJ06	D10
IJ01	G5
IJ11	D7
IJ12	D7
IJ14	D10
IJ15	E1
IJ16	E1
IJ17	E1
IJ18	E4
IJ21	H9
IJ22	H9
IJ24	G8
IJ25	F3
IJ26	G2
IJ27	G3
IJ28	H2
IJ29	H2
IJ30	G4

Small Signal Board: MPIF/AVIP Main: Audio Switch


B4G
MPIF/AVIP MAIN: AUDIO SWITCH
B4G
7C00-A
MPIF
VAADCP
VCC-AADC
VCC1-ASW
VCC2-ASW
MIC2N
MIC2P
MIC1N
MIC1P
MIC AMPS
+5V-AUD
+8V-AUD
+8V-AUD
2K36 1u0
2K35 1u0
2K40 100n
2K41 100n
2K42 47u 16V
2K43 100n
2K44 100n
FK12
2V6
VAADCREF
VAADCN
GND1-ASW
FUSE1
FUSE2
GND-AADC
FUSE3
GND2-ASW
2K45 100n
L1/AM-INT
R1/AM-EXT
MIC1/L2/PIPM
MIC2/R2
LPF
A/D
DLINK1
DLINK2
6.75 MHz
AM SOUND
MIC1
AM
AUDIO SWITCH (DIGITAL OUT)
AUDIO SWITCH (ANALOG OUT)
AUDIO AMPS
AMEXT
L1
R1
L2
R2
L3
R3
L4
R4
L5
R5
DSNDL1
DSNDR1
DSNDL2
DSNDR2
LINEL
LINER
SCART1L
SCART1R
SCART2L
SCART2R
AUDIO-CENTER-IN
AUDIO-IN1-L
AUDIO-IN1-R
AUDIO-IN2-L
AUDIO-IN2-R
AUDIO-IN3-L
AUDIO-IN3-R
AUDIO-IN5-L
AUDIO-IN5-R
AUDIO-IN4-R
AUDIO-IN4-L
IK21
IK01
IK22
IK03
IK04
IK05
IK06
IK07
IK08
IK09
IK10
2K47 RES 1n
2K49 RES 1n
2K51 RES 1n
2K53 RES 1n
2K56 RES 1n
2K57 RES 1n
2K59 RES 1n
2K65 RES 1n
2K66 RES 1n
2K64 RES 1n
2K62 RES 1n
IK11
IK12
IK13
IK14
IK15
IK16
IK17
IK18
IK19
IK20
9K10
9K11
9K12
9K13
9K14
9K15
2K46 RES 1n
2K48 RES 1n
2K50 RES 1n
2K52 RES 1n
2K54 RES 1n
2K55 RES 1n
2K60 1u0
2K58 1u0
2K63 1u0
2K61 1u0
AUDIO-OUT2-R
AUDIO-OUT2-L
AUDIO-OUT1-R
AUDIO-OUT1-L
DSNDR2
DSNDL2
DSNDR1
DSNDL1
AUDIO-OUT3-R
AUDIO-OUT3-L
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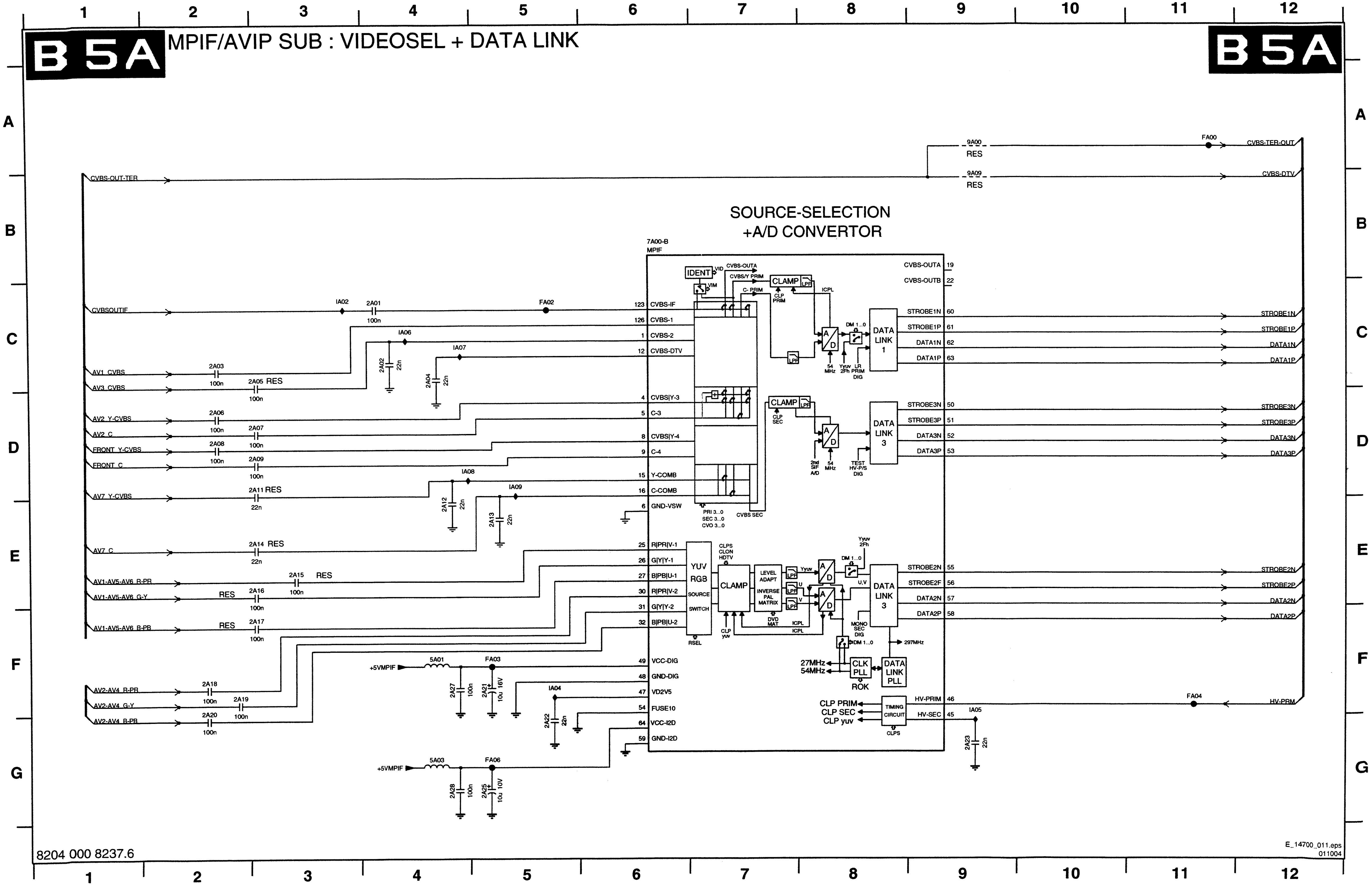
011004

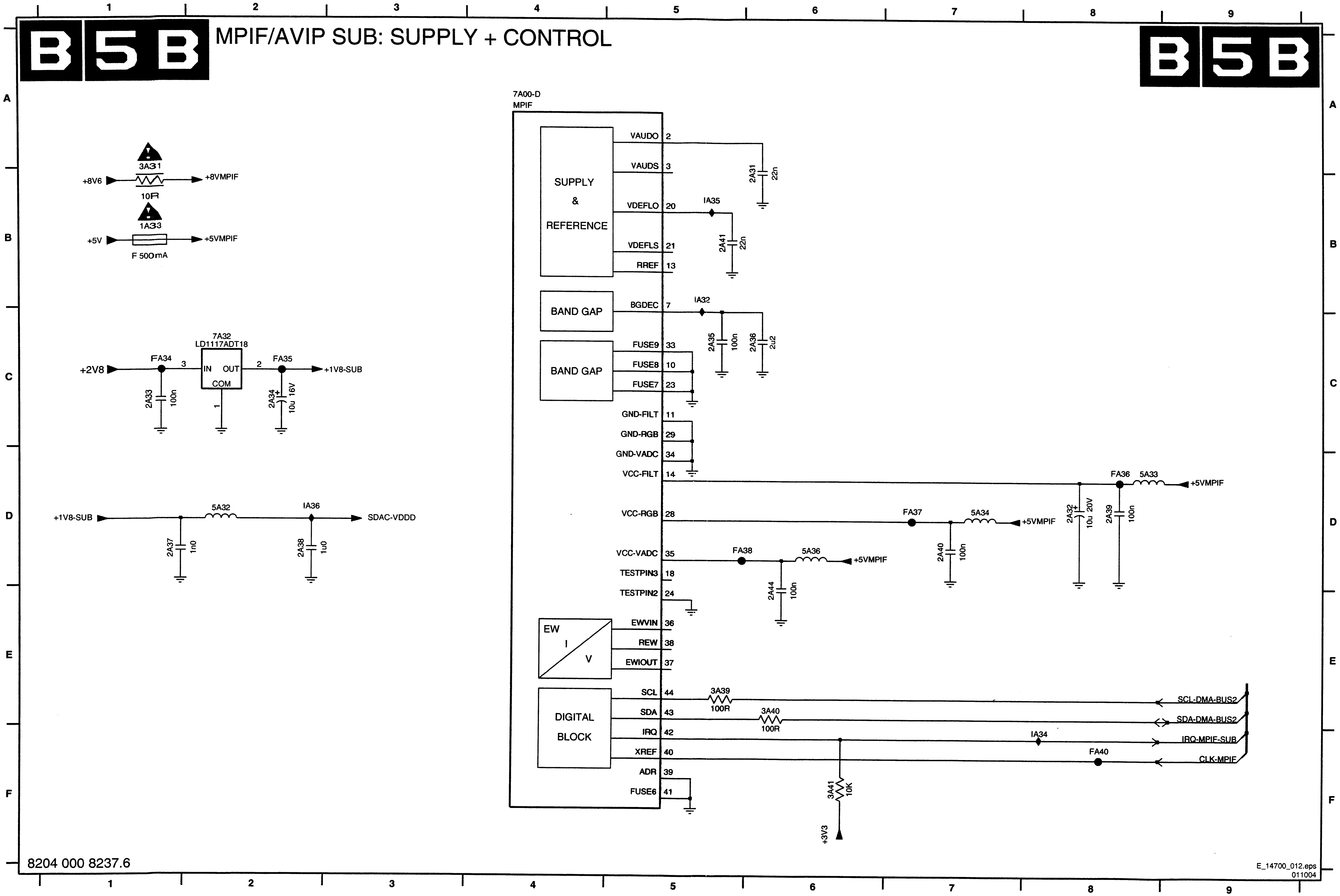
2K35	B2
2K36	B1
2K40	B2
2K41	B3
2K42	B3
2K43	B4
2K44	B4
2K45	C4
2K46	E10
2K47	E5
2K48	E10
2K49	E3
2K50	F10
2K51	F5
2K52	F10
2K53	F3
2K54	H11
2K55	I11
2K56	F5
2K57	G3
2K58	G11
2K59	G5
2K60	G11
2K61	H11
2K62	I4
2K63	G11
2K64	H4
2K65	H3
2K66	H5
7C00-A	A5
9K10	D10
9K11	E10
9K12	F10
9K13	F10
9K14	H11
9K15	H11
FK12	C4
IK01	E5
IK03	F5
IK04	F5
IK05	G5
IK06	G5
IK07	H5
IK08	H5
IK09	H5
IK10	I5
IK11	D9
IK12	E9
IK13	F9
IK14	F9
IK15	G9
IK16	G9
IK17	G9
IK18	H9
IK19	H9
IK20	H9
IK21	E5
IK22	E5

Small Signal Board: MPIF/AVIP Sub: Videosel + Data Link

2A01	C4
2A02	C4
2A03	C2
2A04	C4
2A05	C3
2A06	D2
2A07	D3
2A08	D2
2A09	D3
2A11	D3
2A12	E4
2A13	E5
2A14	E3
2A15	E3
2A16	E3
2A17	F3
2A18	F2
2A19	F2
2A20	G2
2A21	F5
2A22	G5
2A23	G9
2A25	G5
2A27	F4
2A28	G4
5A01	F4
5A03	G4
7A00-B	B6
9A00	A9
9A09	B9
FA00	A11
FA02	C5
FA03	F5
FA04	F11
FA06	G5
IA02	C3
IA04	F5
IA05	F9
IA06	C4
IA07	C4
IA08	D4
IA09	D5


B5A
MPIF/AVIP SUB : VIDEOSEL + DATA LINK
B5A
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G
SOURCE-SELECTION
+A/D CONVERTOR
7A00-B
MPIF
CVBS-OUT-TER
9A00
RES
9A09
RES
FA00
CVBS-TER-OUT
CVBS-DTV
CVBSOUTIF
IA02
2A01
100n
FA02
AV1_CVBS
2A03
100n
AV3_CVBS
2A05 RES
100n
IA06
2A02
22n
IA07
2A04
22n
AV2_Y-CVBS
2A06
100n
AV2_C
2A07
100n
FRONT_Y-CVBS
2A08
100n
FRONT_C
2A09
100n
AV7_Y-CVBS
2A11 RES
22n
IA08
2A12
22n
IA09
2A13
22n
AV7_C
2A14 RES
22n
AV1-AV5-AV6_R-PR
2A15 RES
100n
AV1-AV5-AV6_G-Y
RES
2A16
100n
AV1-AV5-AV6_B-PB
RES
2A17
100n
AV2-AV4_R-PR
2A18
100n
AV2-AV4_G-Y
2A19
100n
AV2-AV4_B-PB
2A20
100n
+5VMPIF
5A01
FA03
2A27
100n
2A21
10u 16V
IA04
2A22
22n
+5VMPIF
5A03
FA06
2A28
100n
2A25
10u 10V
123 CVBS-IF
126 CVBS-1
1 CVBS-2
12 CVBS-DTV
4 CVBS|Y-3
5 C-3
8 CVBS|Y-4
9 C-4
15 Y-COMB
16 C-COMB
6 GND-VSW
25 R|PR|V-1
26 G|Y|Y-1
27 B|PB|U-1
30 R|PR|V-2
31 G|Y|Y-2
32 B|PB|U-2
49 VCC-DIG
48 GND-DIG
47 VD2V5
54 FUSE10
64 VCC-I2D
59 GND-I2D
IDENT
VID
VIM
CVBS-OUTA
CVBS/Y PRIM
C- PRIM
CLAMP
LPF
CLP PRIM
ICPL
LPF
A D
54 MHz
Yyuv 2Fh
LR PRIM DIG
DM 1...0
DATA LINK 1
PRI 3...0
SEC 3...0
CVO 3...0
CVBS SEC
CLAMP
LPF
CLP SEC
A D
2nd SIF A/D
54 MHz
TEST HV-P/S DIG
DATA LINK 3
YUV RGB SOURCE SWITCH
RSEL
CLPS CLON HDTV
CLAMP
CLP yuv
LEVEL ADAPT
INVERSE PAL MATRIX
DVD MAT
LPF
Yyuv
U
V
ICPL
ICPL
A D
A D
Yyuv 2Fh
DM 1...0
U,V
MONO SEC DIG
DM 1...0
297MHz
DATA LINK 3
27MHz
54MHz
CLK PLL
ROK
DATA LINK PLL
CLP PRIM
CLP SEC
CLP yuv
TIMING CIRCUIT
CLPS
CVBS-OUTA 19
CVBS-OUTB 22
STROBE1N 60
STROBE1P 61
DATA1N 62
DATA1P 63
STROBE3N 50
STROBE3P 51
DATA3N 52
DATA3P 53
STROBE2N 55
STROBE2P 56
DATA2N 57
DATA2P 58
HV-PRIM 46
HV-SEC 45
IA05
2A23
22n
FA04
HV-PRM
STROBE1N
STROBE1P
DATA1N
DATA1P
STROBE3N
STROBE3P
DATA3N
DATA3P
STROBE2N
STROBE2P
DATA2N
DATA2P
8204 000 8237.6
E_14700_011.eps
011004

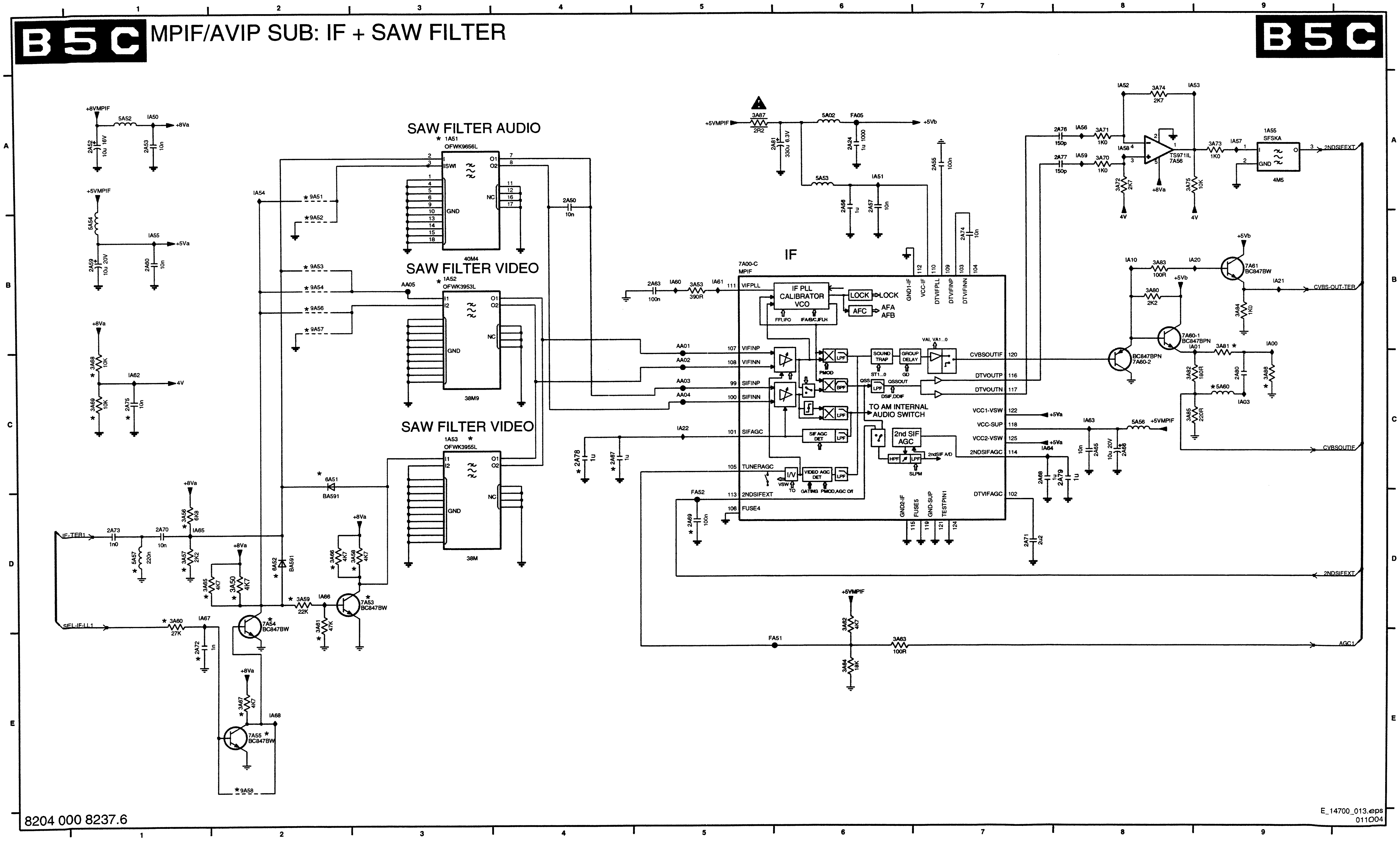
Small Signal Board: MPIF/AVIP Sub: Supply + Control


B5B
MPIF/AVIP SUB: SUPPLY + CONTROL
B5B
1 2 3 4 5 6 7 8 9
A B C D E F
3A31
+8V6
10R
+8VMPIF
1A33
+5V
F 500mA
+5VMPIF
7A32
LD1117ADT18
+2V8
FA34
3
IN
OUT
COM
1
2
FA35
+1V8-SUB
2A33
100n
2A34
10u 16V
+1V8-SUB
5A32
IA36
SDAC-VDDD
2A37
1n0
2A38
1u0
7A00-D
MPIF
SUPPLY
&
REFERENCE
VAUDO 2
VAUDS 3
VDEFLO 20
VDEFLS 21
RREF 13
2A31
22n
IA35
2A41
22n
BAND GAP
BGDEC 7
IA32
2A35
100n
2A36
2u2
BAND GAP
FUSE9 33
FUSE8 10
FUSE7 23
GND-FILT 11
GND-RGB 29
GND-VADC 34
VCC-FILT 14
FA36
5A33
+5VMPIF
VCC-RGB 28
FA37
5A34
+5VMPIF
2A32
10u 20V
2A39
100n
2A40
100n
VCC-VADC 35
FA38
5A36
+5VMPIF
TESTPIN3 18
TESTPIN2 24
2A44
100n
EW
I
V
EWVIN 36
REW 38
EWIOUT 37
DIGITAL
BLOCK
SCL 44
SDA 43
IRQ 42
XREF 40
ADR 39
FUSE6 41
3A39
100R
3A40
100R
IA34
FA40
SCL-DMA-BUS2
SDA-DMA-BUS2
IRQ-MPIF-SUB
CLK-MPIF
3A41
10K
+3V3
8204 000 8237.6
E_14700_012.eps
011004

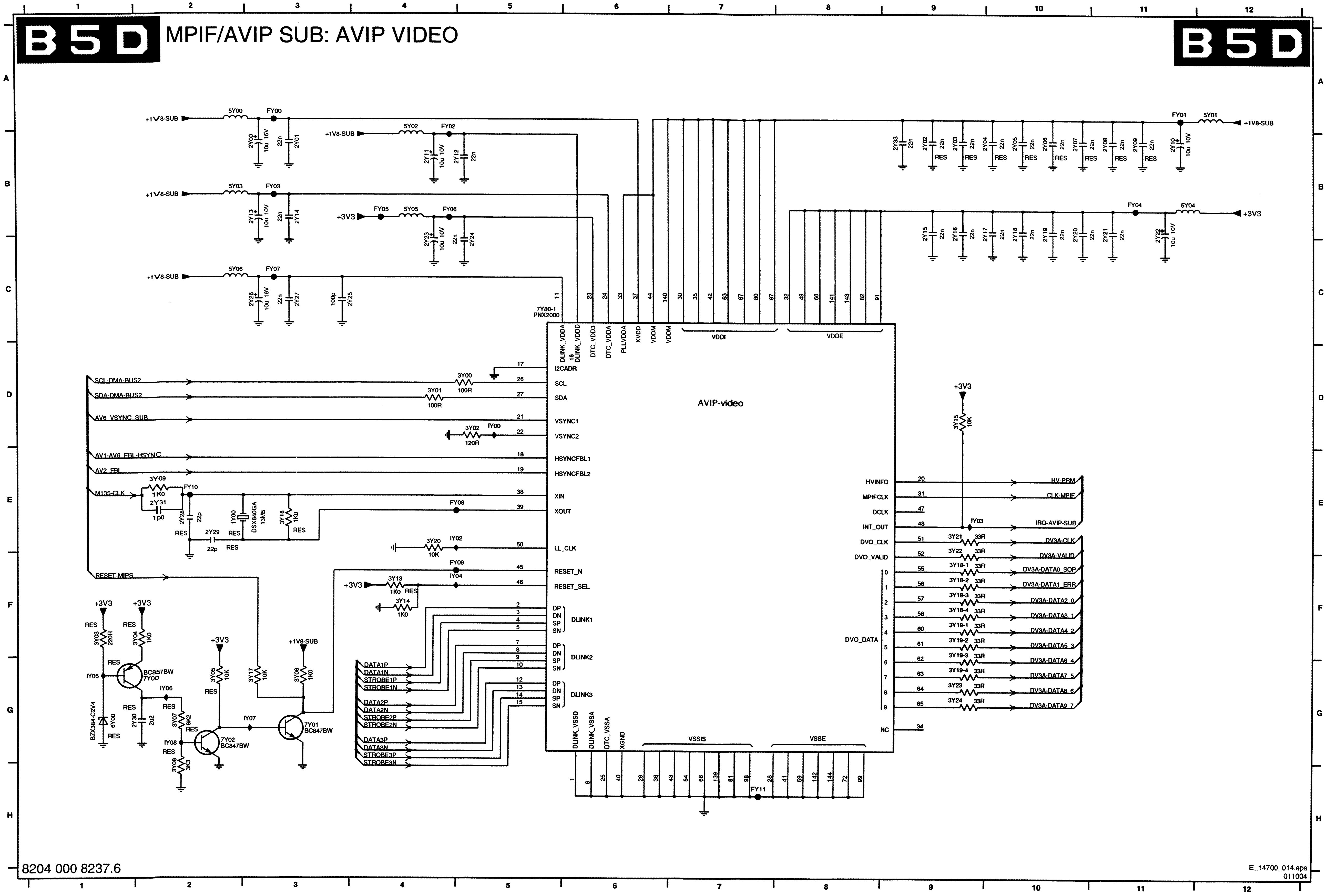
1A33	B1
2A31	B6
2A32	D8
2A33	C1
2A34	C2
2A35	C5
2A36	C6
2A37	D1
2A38	D2
2A39	D8
2A40	D7
2A41	B5
2A44	E6
3A31	B1
3A39	E5
3A40	E6
3A41	F6
5A32	D2
5A33	D8
5A34	D7
5A36	D6
7A00-D	A4
7A32	C2
FA34	C1
FA35	C2
FA36	D8
FA37	D7
FA38	D5
FA40	F8
IA32	B5
IA34	F8
IA35	B5
IA36	D2

Small Signal Board: MPIF/AVIP Sub: IF + SAW Filter

1A51 A3	2A50 A4	2A57 A6	2A66 C8	2A71 D7	2A76 A8	2A81 A6	3A58 D3	3A63 E6	3A68 C1	3A73 A9	3A82 C8	3A87 A5	5A56 C8	7A00-C B5	7A60-1 B8	9A53 B2	AA01 B5	FA05 A6	IA03 C9	IA50 A1	IA55 B1	IA60 B5	IA65 D1
1A52 B3	2A52 A1	2A59 B1	2A67 C4	2A72 E1	2A77 A8	3A50 D2	3A59 D2	3A64 E6	3A69 C1	3A74 A8	3A83 B8	5A02 A6	5A57 D1	7A53 D3	7A60-2 C8	9A54 B2	AA02 C5	FA51 E6	IA10 B8	IA51 A6	IA56 A8	IA61 B5	IA66 D2
1A53 C3	2A53 A1	2A60 B1	2A68 C7	2A73 D1	2A78 C4	3A53 B5	3A60 D1	3A65 D1	3A70 A8	3A75 A8	3A84 B9	5A52 A1	5A60 C9	7A54 D2	7A61 B9	9A56 B2	AA03 C5	FA52 D5	IA20 B8	IA52 A8	IA57 A9	IA62 C1	IA67 D1
1A55 A9	2A55 A7	2A63 B5	2A69 D5	2A74 B7	2A79 C8	3A56 D1	3A61 D2	3A66 D2	3A71 A8	3A80 B8	3A85 C8	5A53 A6	6A51 C2	7A55 E2	9A51 A2	9A57 B2	AA04 C5	IA00 B9	IA21 B9	IA53 A8	IA58 A8	IA63 C8	IA68 E2
2A24 A6	2A56 A6	2A65 C8	2A70 D1	2A75 C1	2A80 C9	3A57 D1	3A62 D6	3A67 E2	3A72 A8	3A81 B9	3A86 C9	5A54 B1	6A52 D2	7A56 A8	9A52 B2	9A58 E2	AA05 B3	IA01 B8	IA22 C5	IA54 A2	IA59 A8	IA64 C7	


B5C MPIF/AVIP SUB: IF + SAW FILTER
B5C
1 2 3 4 5 6 7 8 9
A B C D E
+8VMPIF
5A52
IA50
+8Va
2A52 10u 16V
2A53 10n
+5VMPIF
5A54
IA55
+5Va
2A59 10u 20V
2A60 10n
+8Va
3A68 10K
IA62
4V
3A69 10K
2A75 10n
SAW FILTER AUDIO
1A51
OFWK9656L
I
ISWI
O1
O2
NC
GND
40M4
IA54
9A51
9A52
9A53
9A54
9A56
9A57
2A50 10n
SAW FILTER VIDEO
AA05
1A52
OFWK3953L
I1
I2
38M9
SAW FILTER VIDEO
1A53
OFWK3955L
38M
6A51
BA591
6A52
BA591
IF-TER1
2A73 1n0
2A70 10n
5A57 220n
3A56 6K8
IA65
3A57 2K2
3A65 4K7
3A50 4K7
3A59 22K
IA66
3A61 47K
7A53 BC847BW
3A66 4K7
3A58 4K7
SEL-IF-LL1
3A60 27K
IA67
2A72 1n
7A54 BC847BW
3A67 4K7
IA68
7A55 BC847BW
9A58
+5VMPIF
3A87 2R2
2A81 330u 6.3V
5A02
FA05
+5Vb
2A24 1u 1000
5A53
IA51
2A56 1u
2A57 10n
2A55 100n
2A74 10n
IF
7A00-C
MPIF
2A63 100n
IA60
3A53 390R
IA61
111 VIFPLL
IF PLL CALIBRATOR VCO
FFI,IFO
IFA/B/C,IFLH
LOCK
LOCK
AFC
AFA
AFB
GND1-IF
VCC-IF
DTVIFPLL
DTVIFINP
DTVIFINN
112 110 109 103 104
AA01
AA02
AA03
AA04
107 VIFINP
108 VIFINN
99 SIFINP
100 SIFINN
PMOD
LPF
BPF
SOUND TRAP
GROUP DELAY
ST1...0
GD
VAI, VA1...0
QSS
QSSOUT
DSIF,DDIF
TO AM INTERNAL AUDIO SWITCH
IA22
101 SIFAGC
SIF AGC DET
105 TUNERAGC
I/V
VSW
TO
VIDEO AGC DET
GATING
PMOD,AGC Off
2nd SIF AGC
HPF
2ndSIF A/D
SLPM
FA52
113 2NDSIFEXT
106 FUSE4
2A69 100n
2A78 1u
2A67 1u
CVBSOUTIF 120
DTVOUTP 116
DTVOUTN 117
VCC1-VSW 122
VCC-SUP 118
VCC2-VSW 125
2NDSIFAGC 114
DTVIFAGC 102
GND2-IF
FUSE5
GND-SUP
TESTPIN1
115 119 121 124
2A71 2u2
IA64
2A88 1u
2A79 1u
IA63
2A65 10n
2A66 10u 20V
5A56
IA52
3A74 2K7
IA53
2A76 150p
IA56
3A71 1K0
IA58
2A77 150p
IA59
3A70 1K0
3A72 2K7
TS971IL
7A56
3A75 10K
3A73 1K0
IA57
1A55
SFSKA
GND
4M5
2NDSIFEXT
IA10
3A83 100R
IA20
7A61 BC847BW
3A80 2K2
IA21
CVBS-OUT-TER
3A84 1K0
7A60-1 BC847BPN
BC847BPN 7A60-2
IA01
3A81
IA00
3A82 180R
2A80
3A86
5A60
IA03
3A85 220R
CVBSOUTIF
2NDSIFEXT
FA51
3A62 4K7
3A63 100R
3A64 18K
AGC1
8204 000 8237.6
E_14700_013.eps
011004

Small Signal Board: MPIF/AVIP Sub: AVIP Video


B5D
MPIF/AVIP SUB: AVIP VIDEO
B5D
+1V8-SUB
5Y00
FY00
2Y00 10u 16V
22n 2Y01
5Y02
FY02
2Y11 10u 10V
2Y12 22n
5Y03
FY03
2Y13 10u 10V
22n 2Y14
+3V3
FY05
5Y05
FY06
2Y23 10u 10V
22n 2Y24
5Y06
FY07
2Y26 10u 16V
22n 2Y27
100p 2Y25
7Y80-1
PNX2000
FY01
5Y01
2Y33 22n
2Y02 22n
2Y03 22n
2Y04 22n
2Y05 22n
2Y06 22n
2Y07 22n
2Y08 22n
2Y09 22n
2Y10 10u 10V
RES
FY04
5Y04
2Y15 22n
2Y16 22n
2Y17 22n
2Y18 22n
2Y19 22n
2Y20 22n
2Y21 22n
2Y22 10u 10V
DLINK_VDDA
DLINK_VDDD
DTC_VDD3
DTC_VDDA
PLLVDDA
XVDD
VDDM
VDDI
VDDE
AVIP-video
I2CADR
SCL
SDA
VSYNC1
VSYNC2
HSYNCFBL1
HSYNCFBL2
XIN
XOUT
LL_CLK
RESET_N
RESET_SEL
DP DN SP SN
DLINK1
DLINK2
DLINK3
SCL-DMA-BUS2
SDA-DMA-BUS2
AV6_VSYNC_SUB
AV1-AV6_FBL-HSYNC
AV2_FBL
M135-CLK
RESET-MIPS
3Y00 100R
3Y01 100R
3Y02 120R
IY00
3Y09 1K0
2Y31 1p0
FY10
2Y28 22p
2Y29 22p
1Y00 DSX840GA 13M5
3Y16 1K0
FY08
3Y20 10K
IY02
FY09
IY04
3Y13 1K0
3Y14 1K0
3Y03 220R
3Y04 1K0
IY05
BC857BW 7Y00
IY06
2Y30 2u2
BZX384-C2V4 6Y00
3Y05 10K
3Y07 8K2
IY08
3Y08 3K3
7Y02 BC847BW
IY07
3Y17 10K
3Y06 1K0
7Y01 BC847BW
DATA1P
DATA1N
STROBE1P
STROBE1N
DATA2P
DATA2N
STROBE2P
STROBE2N
DATA3P
DATA3N
STROBE3P
STROBE3N
HVINFO
MPIFCLK
DCLK
INT_OUT
DVO_CLK
DVO_VALID
DVO_DATA
NC
3Y15 10K
IY03
HV-PRM
CLK-MPIF
IRQ-AVIP-SUB
3Y21 33R
3Y22 33R
3Y18-1 33R
3Y18-2 33R
3Y18-3 33R
3Y18-4 33R
3Y19-1 33R
3Y19-2 33R
3Y19-3 33R
3Y19-4 33R
3Y23 33R
3Y24 33R
DV3A-CLK
DV3A-VALID
DV3A-DATA0_SOP
DV3A-DATA1_ERR
DV3A-DATA2_0
DV3A-DATA3_1
DV3A-DATA4_2
DV3A-DATA5_3
DV3A-DATA6_4
DV3A-DATA7_5
DV3A-DATA8_6
DV3A-DATA9_7
DLINK_VSSD
DLINK_VSSA
DTC_VSSA
XGND
VSSIS
VSSE
FY11
8204 000 8237.6
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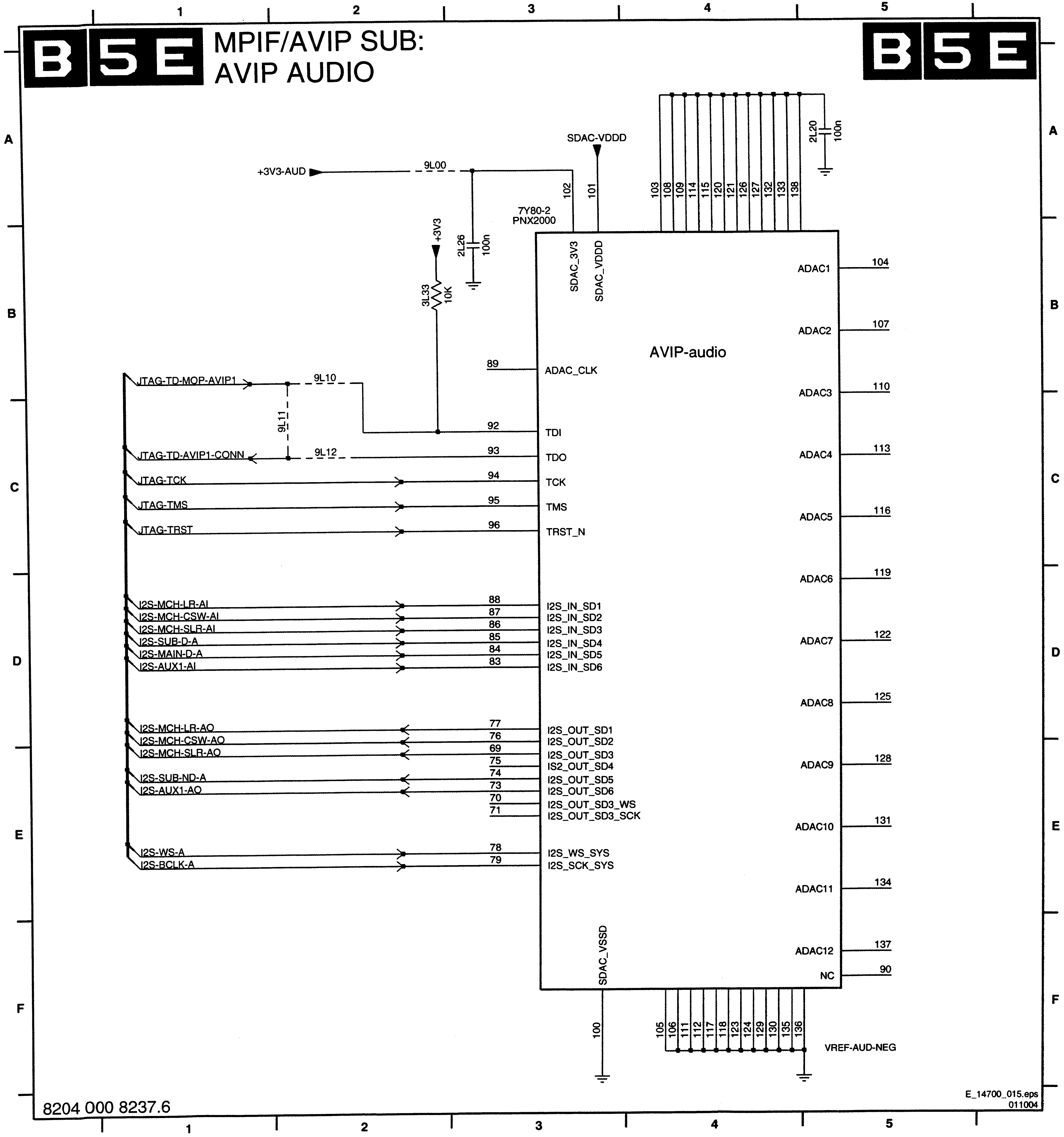
011004

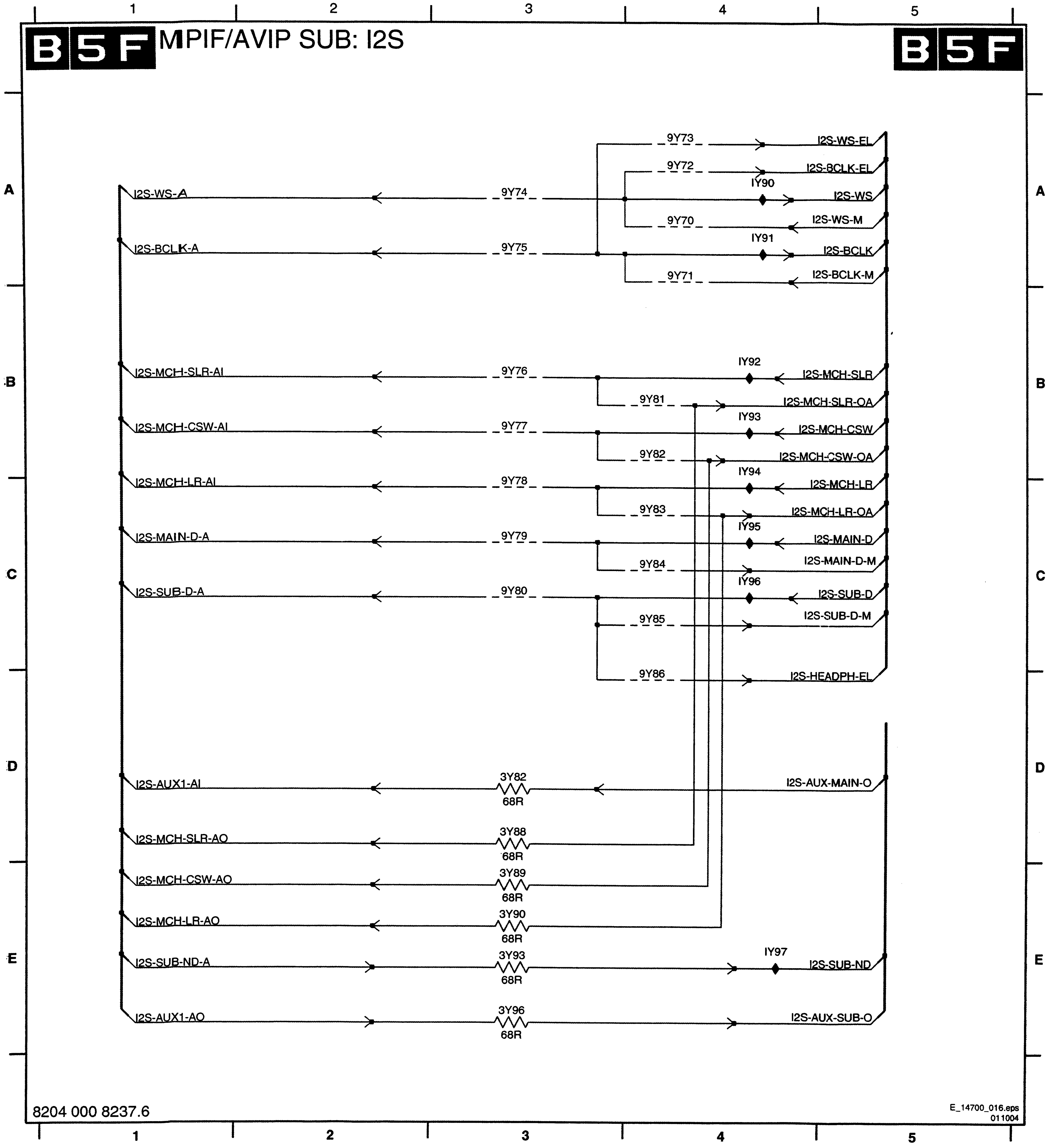
1Y00	E2
2Y00	B3
2Y01	B3
2Y02	B9
2Y03	B9
2Y04	B10
2Y05	B10
2Y06	B10
2Y07	B10
2Y08	B11
2Y09	B11
2Y10	B11
2Y11	B4
2Y12	B5
2Y13	B3
2Y14	B3
2Y15	B9
2Y16	B9
2Y17	B10
2Y18	B10
2Y19	B10
2Y20	B10
2Y21	B11
2Y22	B11
2Y23	C4
2Y24	C5
2Y25	C3
2Y26	C3
2Y27	C3
2Y28	E2
2Y29	E2
2Y30	G2
2Y31	E2
2Y33	B9
3Y00	D5
3Y01	D4
3Y02	D5
3Y03	F1
3Y04	F2
3Y05	G2
3Y06	G3
3Y07	G2
3Y08	H2
3Y09	E2
3Y13	F4
3Y14	F4
3Y15	D9
3Y16	E3
3Y17	G3
3Y18-1	F9
3Y18-2	F9
3Y18-3	F9
3Y18-4	F9
3Y19-1	F9
3Y19-2	F9
3Y19-3	F9
3Y19-4	G9
3Y20	E4
3Y21	E9
3Y22	E9
3Y23	G9
3Y24	G9
5Y00	A2
5Y01	A12
5Y02	A4
5Y03	B2
5Y04	B11
5Y05	B4
5Y06	C2
6Y00	G1
7Y00	G2
7Y01	G3
7Y02	G2
7Y80-1	C5
FY00	A3
FY01	A11
FY02	A4
FY03	B3
FY04	B11
FY05	B4
FY06	B4
FY07	C3
FY08	E4
FY09	F4
FY10	E2
FY11	H7
IY00	D5
IY02	E4
IY03	E9
IY04	F4
IY05	G1
IY06	G2
IY07	G3
IY08	G2

Small Signal Board: MPIF/AVIP Sub: AVIP Audio


B5E
MPIF/AVIP SUB:
AVIP AUDIO
B5E
1 2 3 4 5
A B C D E F
+3V3-AUD
9L00
SDAC-VDDD
102
101
103 108 109 114 115 120 121 126 127 132 133 138
2L20
100n
7Y80-2
PNX2000
+3V3
2L26
100n
3L33
10K
SDAC_3V3
SDAC_VDDD
AVIP-audio
89 ADAC_CLK
JTAG-TD-MOP-AVIP1
9L10
9L11
92 TDI
JTAG-TD-AVIP1-CONN
9L12
93 TDO
JTAG-TCK
94 TCK
JTAG-TMS
95 TMS
JTAG-TRST
96 TRST_N
I2S-MCH-LR-AI
I2S-MCH-CSW-AI
I2S-MCH-SLR-AI
I2S-SUB-D-A
I2S-MAIN-D-A
I2S-AUX1-AI
88 I2S_IN_SD1
87 I2S_IN_SD2
86 I2S_IN_SD3
85 I2S_IN_SD4
84 I2S_IN_SD5
83 I2S_IN_SD6
I2S-MCH-LR-AO
I2S-MCH-CSW-AO
I2S-MCH-SLR-AO
I2S-SUB-ND-A
I2S-AUX1-AO
77 I2S_OUT_SD1
76 I2S_OUT_SD2
69 I2S_OUT_SD3
75 IS2_OUT_SD4
74 I2S_OUT_SD5
73 I2S_OUT_SD6
70 I2S_OUT_SD3_WS
71 I2S_OUT_SD3_SCK
I2S-WS-A
I2S-BCLK-A
78 I2S_WS_SYS
79 I2S_SCK_SYS
ADAC1 104
ADAC2 107
ADAC3 110
ADAC4 113
ADAC5 116
ADAC6 119
ADAC7 122
ADAC8 125
ADAC9 128
ADAC10 131
ADAC11 134
ADAC12 137
NC 90
SDAC_VSSD
100
105 106 111 112 117 118 123 124 129 130 135 136
VREF-AUD-NEG
8204 000 8237.6
E_14700_015.eps
011004

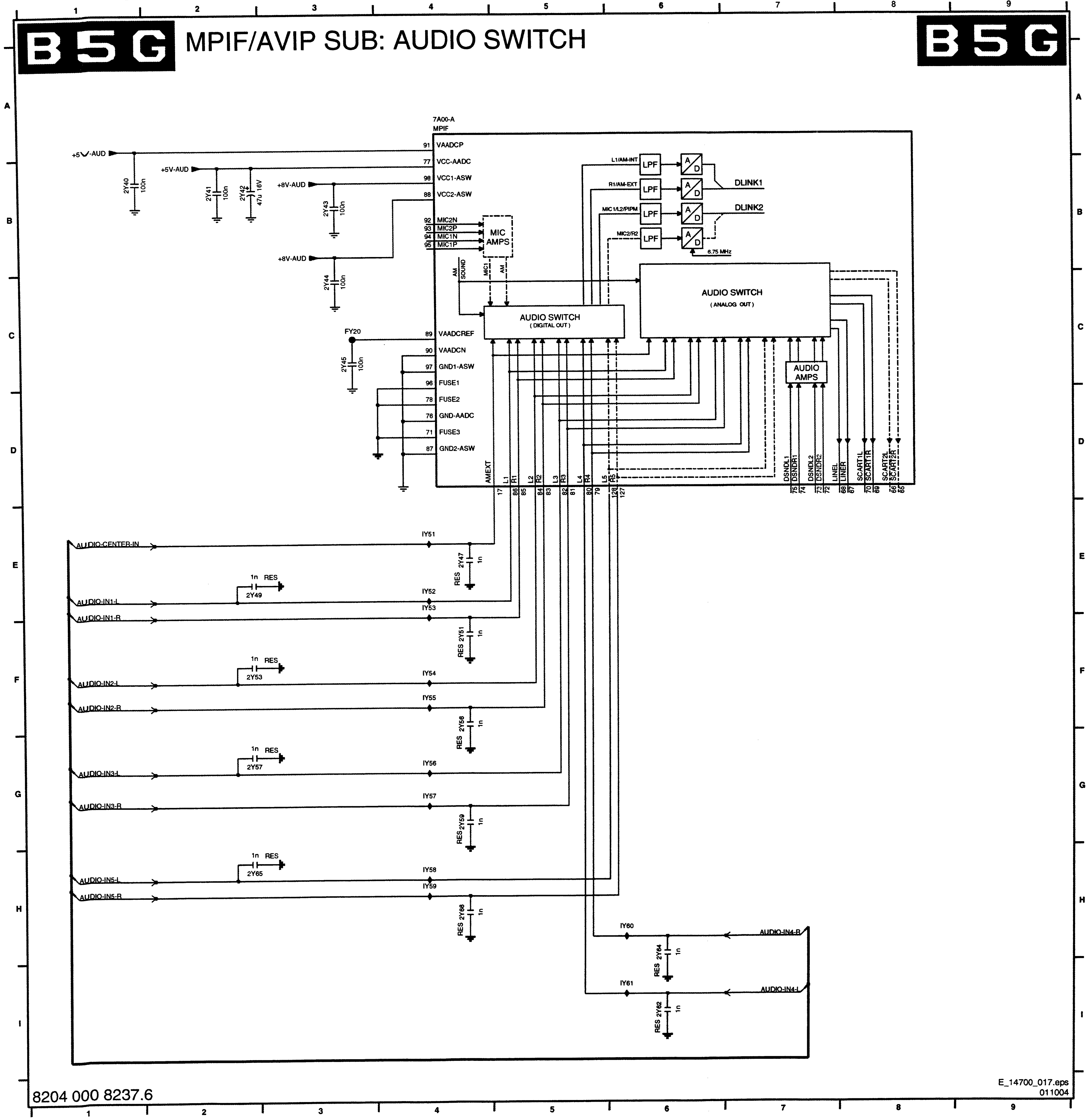
2L20	A5
2L26	B3
3L33	B2
7Y80-2	A3
9L00	A2
9L10	B2
9L11	C2
9L12	C2

Small Signal Board: MPIF/AVIP Sub: I2S


1
2
3
4
5
B5F MPIF/AVIP SUB: I2S
B5F
A
B
C
D
E
9Y73
I2S-WS-EL
9Y72
I2S-BCLK-EL
IY90
I2S-WS-A
9Y74
I2S-WS
9Y70
I2S-WS-M
IY91
I2S-BCLK-A
9Y75
I2S-BCLK
9Y71
I2S-BCLK-M
IY92
I2S-MCH-SLR-AI
9Y76
I2S-MCH-SLR
9Y81
I2S-MCH-SLR-OA
IY93
I2S-MCH-CSW-AI
9Y77
I2S-MCH-CSW
9Y82
I2S-MCH-CSW-OA
IY94
I2S-MCH-LR-AI
9Y78
I2S-MCH-LR
9Y83
I2S-MCH-LR-OA
IY95
I2S-MAIN-D-A
9Y79
I2S-MAIN-D
9Y84
I2S-MAIN-D-M
IY96
I2S-SUB-D-A
9Y80
I2S-SUB-D
9Y85
I2S-SUB-D-M
9Y86
I2S-HEADPH-EL
I2S-AUX1-AI
3Y82
68R
I2S-AUX-MAIN-O
I2S-MCH-SLR-AO
3Y88
68R
I2S-MCH-CSW-AO
3Y89
68R
I2S-MCH-LR-AO
3Y90
68R
IY97
I2S-SUB-ND-A
3Y93
68R
I2S-SUB-ND
I2S-AUX1-AO
3Y96
68R
I2S-AUX-SUB-O
8204 000 8237.6
E_14700_016.eps
011004

3Y82	D3
3Y88	D3
3Y89	E3
3Y90	E3
3Y93	E3
3Y96	E3
9Y70	A4
9Y71	A4
9Y72	A4
9Y73	A4
9Y74	A3
9Y75	A3
9Y76	B3
9Y77	B3
9Y78	C3
9Y79	C3
9Y80	C3
9Y81	B4
9Y82	B4
9Y83	C4
9Y84	C4
9Y85	C4
9Y86	D4
IY90	A4
IY91	A4
IY92	B4
IY93	B4
IY94	B4
IY95	C4
IY96	C4
IY97	E4

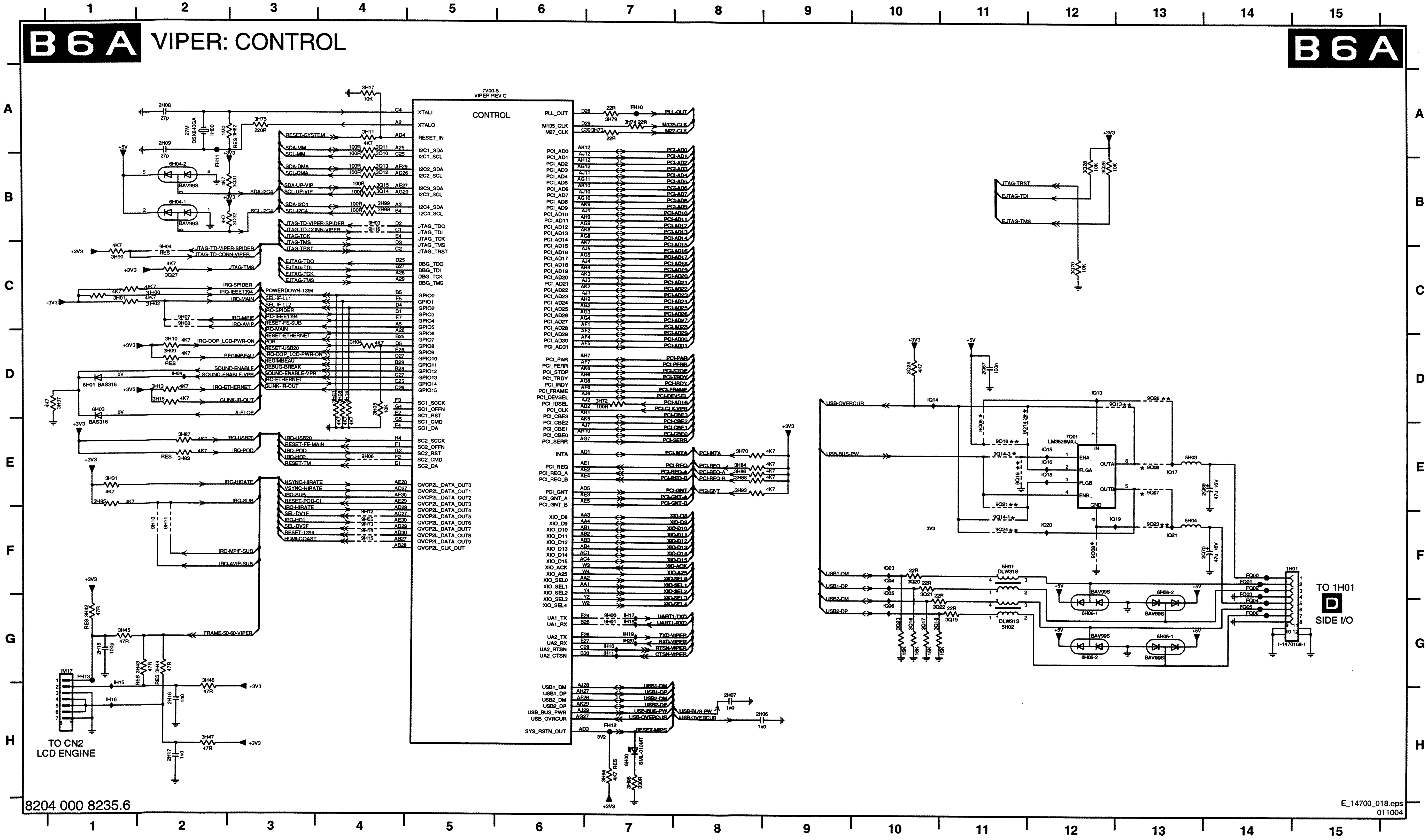
Small Signal Board: MPIF/AVIP Sub: Audio Switch


B5G
MPIF/AVIP SUB: AUDIO SWITCH
B5G
7A00-A
MPIF
91 VAADCP
77 VCC-AADC
98 VCC1-ASW
88 VCC2-ASW
92 MIC2N
93 MIC2P
94 MIC1N
95 MIC1P
MIC AMPS
89 VAADCREF
90 VAADCN
97 GND1-ASW
96 FUSE1
78 FUSE2
76 GND-AADC
71 FUSE3
87 GND2-ASW
AM SOUND
MIC1
AM
AUDIO SWITCH
(DIGITAL OUT)
AUDIO SWITCH
(ANALOG OUT)
AUDIO AMPS
L1/AM-INT
R1/AM-EXT
MIC1/L2/PIPM
MIC2/R2
LPF
A D
DLINK1
DLINK2
6.75 MHz
AMEXT 17
L1 86
R1 85
L2 84
R2 83
L3 82
R3 81
L4 80
R4 79
L5 128
R5 127
DSNDL1 75
DSNDR1 74
DSNDL2 73
DSNDR2 72
LINEL 68
LINER 67
SCART1L 70
SCART1R 69
SCART2L 66
SCART2R 65
+5V-AUD
+5V-AUD
+8V-AUD
+8V-AUD
2Y40 100n
2Y41 100n
2Y42 47u 16V
2Y43 100n
2Y44 100n
FY20
2Y45 100n
AUDIO-CENTER-IN
IY51
RES 2Y47 1n
1n RES 2Y49
AUDIO-IN1-L
IY52
AUDIO-IN1-R
IY53
RES 2Y51 1n
1n RES 2Y53
AUDIO-IN2-L
IY54
AUDIO-IN2-R
IY55
RES 2Y56 1n
1n RES 2Y57
AUDIO-IN3-L
IY56
AUDIO-IN3-R
IY57
RES 2Y59 1n
1n RES 2Y65
AUDIO-IN5-L
IY58
AUDIO-IN5-R
IY59
RES 2Y66 1n
IY60
AUDIO-IN4-R
RES 2Y64 1n
IY61
AUDIO-IN4-L
RES 2Y62 1n
A B C D E F G H I
1 2 3 4 5 6 7 8 9
8204 000 8237.6
E_14700_017.eps
011004

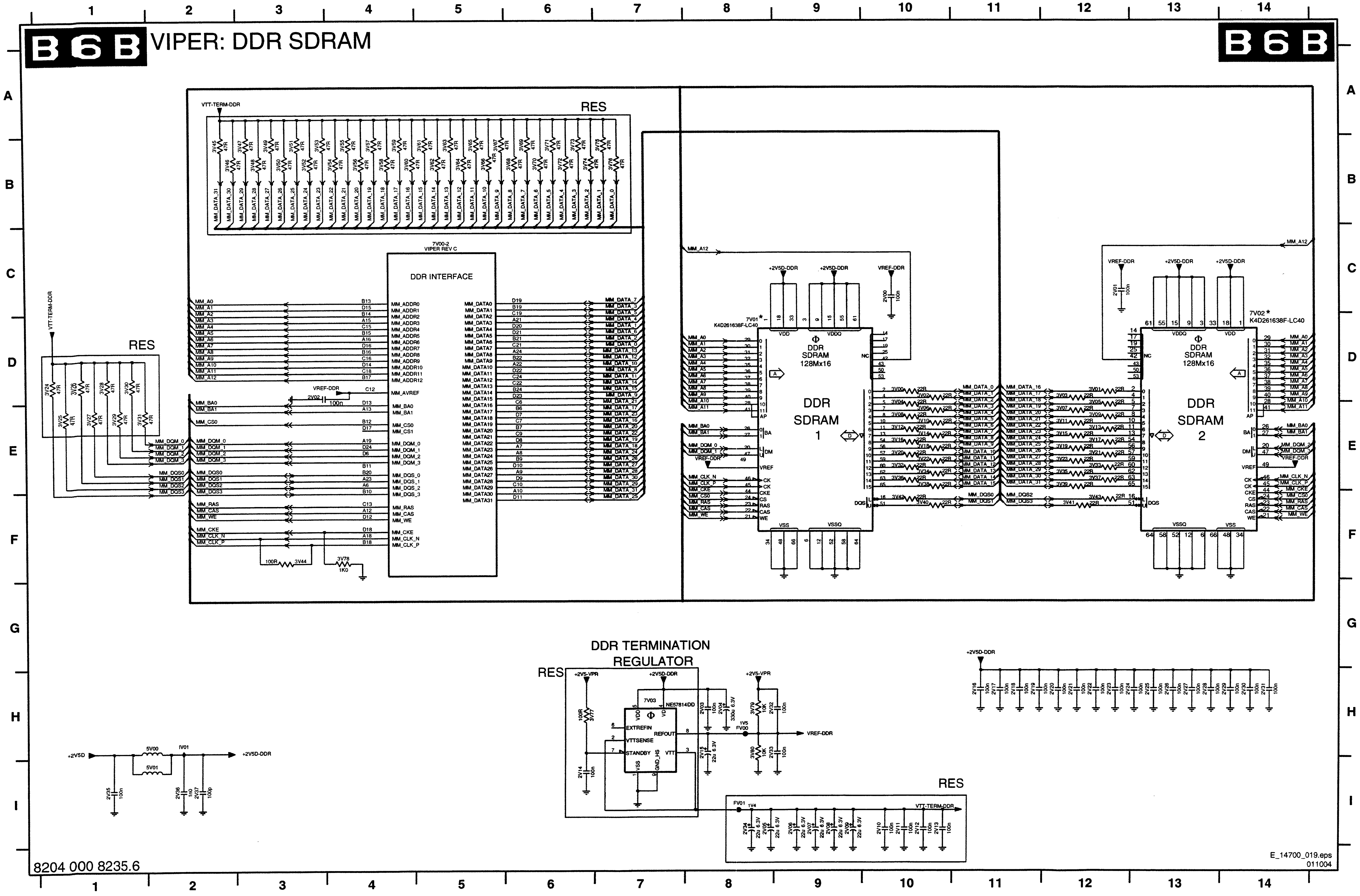
2Y40	B1
2Y41	B2
2Y42	B2
2Y43	B3
2Y44	C3
2Y45	C3
2Y47	E4
2Y49	E2
2Y51	F4
2Y53	F2
2Y56	F4
2Y57	G2
2Y59	G4
2Y62	I6
2Y64	H6
2Y65	H2
2Y66	H4
7A00-A	A4
FY20	C3
IY51	E4
IY52	E4
IY53	E4
IY54	F4
IY55	F4
IY56	G4
IY57	G4
IY58	H4
IY59	H4
IY60	H6
IY61	I6

Small Signal Board: Viper: Control

1H00	A2
1H01	F14
1M17	G1
2H06	H8
2H07	H8
2H08	A2
2H09	A2
2H15	G1
2H16	H2
2H17	H2
2Q67	D11
2Q69	E14
2Q70	F14
3H00	C2
3H01	C1
3H02	C2
3H03	D4
3H04	D4
3H05	D4
3H08	D4
3H09	D2
3H10	D2
3H11	A4
3H13	D2
3H15	D2
3H16	D4
3H17	A4
3H31	E1
3H42	G1
3H43	G2
3H44	G2
3H45	G1
3H46	H2
3H47	H2
3H70	E8
3H72	D7
3H73	A7
3H74	A7
3H75	A3
3H79	A7
3H82	A3
3H83	E2
3H84	E8
3H85	E1
3H86	E8
3H87	E2
3H88	E8
3H90	C1
3H93	E8
3H94	H7
3H95	H7
3H97	D1
3H98	B4
3H99	B4
3Q10	B4
3Q11	A4
3Q12	B4
3Q13	B4
3Q14	B4
3Q15	B4
3Q16	G10
3Q17	G10
3Q18	G10
3Q19	G11
3Q20	F10
3Q21	F10
3Q22	G10
3Q23	G10
3Q24	D10
3Q26	B12
3Q27	C2
3Q28	B12
3Q31	B3
3Q32	B3
3Q70	C12
5H01	F11
5H02	G11
5H03	E13
5H04	F13
6H00	H7
6H01	D1
6H03	D1
6H04-1	B2
6H04-2	B2
6H05-1	G13
6H05-2	G12
6H06-1	G12
6H06-2	F13
7Q01	E12
7V00-5	A5
9H00	G7
9H01	G7
9H03	B4
9H04	C2
9H05	F4
9H06	E4
9H07	C2
9H08	C2
9H10	F2
9H11	F2
9H12	F4
9H13	F4
9H14	F4
9H15	F4
9H16	B4
9Q05	E11
9Q06	E13
9Q07	E13
9Q08	F12
9Q13	D12
9Q14-1	F11
9Q14-2	E11
9Q14-3	E11
9Q16	E11
9Q19	E11
9Q21	E11
9Q23	F13
9Q24	F11
9Q26	D13
FH10	A7
FH11	B2
FH12	H7
FH13	G1
FQ00	F14
FQ01	F14
FQ02	F14
FQ03	F14
FQ04	G14
FQ05	G14
FQ06	G14
IH09	D2
IH10	G7
IH11	G7
IH15	H1
IH16	H1
IH17	G7
IH18	G7
IH19	G7
IH20	G7
IQ03	F10
IQ04	F10
IQ05	F10
IQ06	G10
IQ13	D12
IQ14	D10
IQ15	E12
IQ16	E12
IQ17	E13
IQ18	E12
IQ19	F12
IQ20	F12
IQ21	F13

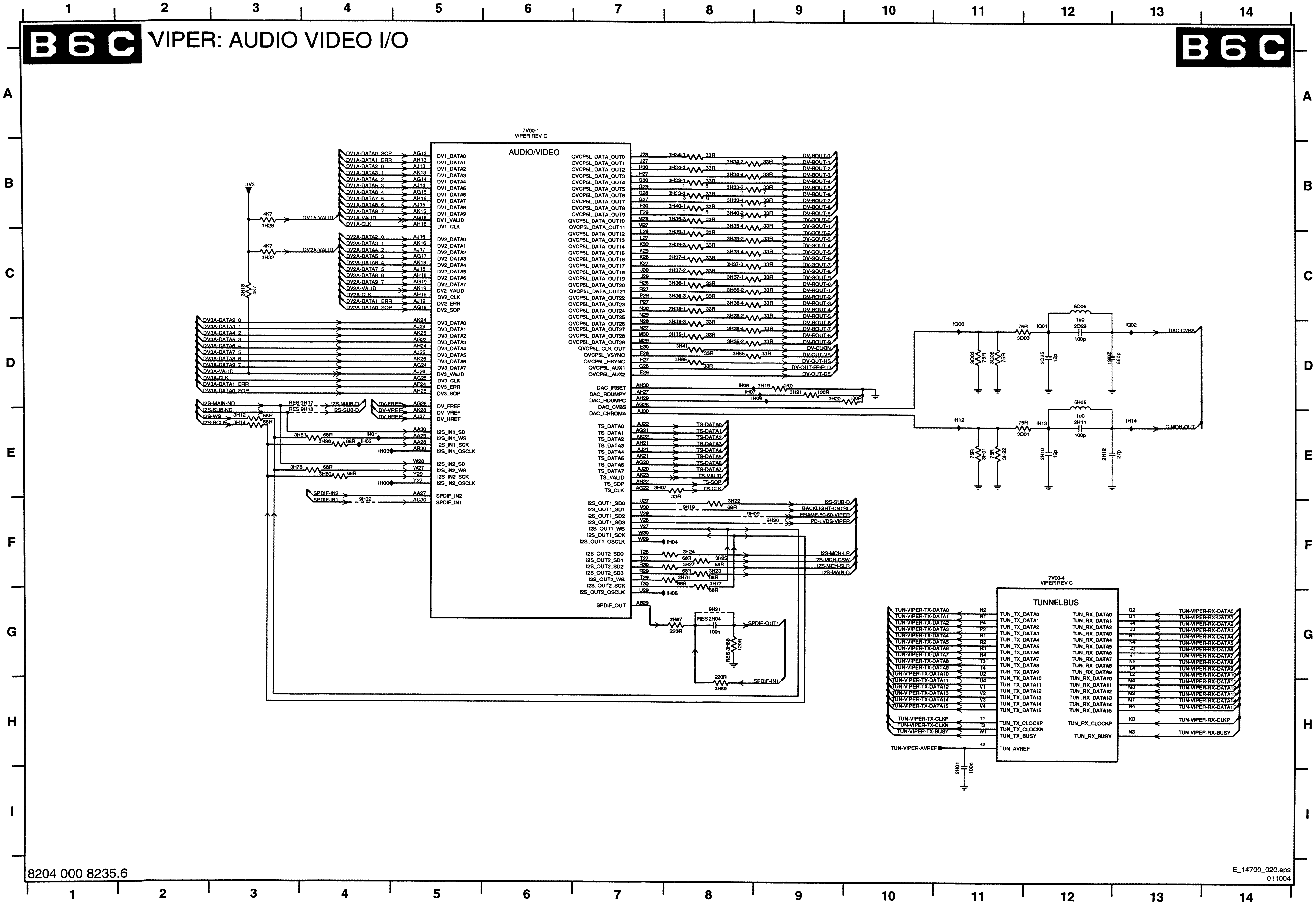

B6A
VIPER: CONTROL
7V00-5
VIPER REV C
CONTROL
XTALI
XTALO
RESET_IN
I2C1_SDA
I2C1_SCL
I2C2_SDA
I2C2_SCL
I2C3_SDA
I2C3_SCL
I2C4_SDA
I2C4_SCL
JTAG_TDO
JTAG_TDI
JTAG_TCK
JTAG_TMS
JTAG_TRST
DBG_TDO
DBG_TDI
DBG_TCK
DBG_TMS
GPIO0 … GPIO15
SC1_SCCK
SC1_OFFN
SC1_RST
SC1_CMD
SC1_DA
SC2_SCCK
SC2_OFFN
SC2_RST
SC2_CMD
SC2_DA
QVCP2L_DATA_OUT0 … QVCP2L_DATA_OUT9
QVCP2L_CLK_OUT
PLL_OUT
M135_CLK
M27_CLK
PCI_AD0 … PCI_AD31
PCI_PAR
PCI_PERR
PCI_STOP
PCI_TRDY
PCI_IRDY
PCI_FRAME
PCI_DEVSEL
PCI_IDSEL
PCI_CLK
PCI_CBE3
PCI_CBE2
PCI_CBE1
PCI_CBE0
PCI_SERR
INTA
PCI_REQ
PCI_REQ_A
PCI_REQ_B
PCI_GNT
PCI_GNT_A
PCI_GNT_B
XIO_D8 … XIO_D15
XIO_ACK
XIO_A25
XIO_SEL0 … XIO_SEL4
UA1_TX
UA1_RX
UA2_TX
UA2_RX
UA2_RTSN
UA2_CTSN
USB1_DM
USB1_DP
USB2_DM
USB2_DP
USB_BUS_PWR
USB_OVRCUR
SYS_RSTN_OUT
27M
DSX840GA
BAV99S
BAS316
7Q01
LM3526MX-L
ENA_
FLGA
FLGB
ENB_
OUTA
OUTB
GND
DLW31S
1-1470168-1
TO 1H01
D
SIDE I/O
TO CN2
LCD ENGINE
+3V3
+5V
8204 000 8235.6
E_14700_018.eps
011004

Small Signal Board: Viper: DDR SDRAM


B6B
VIPER: DDR SDRAM
B6B
RES
VTT-TERM-DDR
7V00-2
VIPER REV C
DDR INTERFACE
RES
VTT-TERM-DDR
VREF-DDR
7V01
K4D261638F-LC40
DDR SDRAM 128Mx16
DDR SDRAM 1
7V02
K4D261638F-LC40
DDR SDRAM 128Mx16
DDR SDRAM 2
+2V5D-DDR
VREF-DDR
MM_A12
DDR TERMINATION REGULATOR
RES
7V03
NE57814DD
EXTREFIN
VTTSENSE
STANDBY
REFOUT
VTT
GND_HS
+2V5-VPR
+2V5D-DDR
VREF-DDR
FV00
FV01
RES
VTT-TERM-DDR
+2V5D
5V00
5V01
IV01
+2V5D-DDR
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
8204 000 8235.6
E_14700_019.eps
011004

2V00	C10
2V01	C12
2V02	D3
2V03	H8
2V04	H8
2V05	I8
2V06	I9
2V07	I9
2V08	I9
2V09	I9
2V10	I10
2V11	I10
2V12	I10
2V13	I10
2V14	I6
2V15	H8
2V16	H11
2V17	H11
2V18	H11
2V19	H11
2V20	H12
2V21	H12
2V22	H12
2V23	H12
2V24	H12
2V25	H13
2V26	H13
2V27	H13
2V28	H13
2V29	H14
2V30	H14
2V31	H14
2V32	H8
2V33	H8
2V34	I8
2V35	I1
2V36	I2
2V37	I2
3V00	D10
3V01	D12
3V02	D10
3V03	D12
3V04	E10
3V05	E12
3V06	E10
3V07	E12
3V08	E10
3V09	E12
3V10	E10
3V11	E12
3V12	E10
3V13	E12
3V14	E10
3V15	E12
3V16	E10
3V17	E12
3V18	E10
3V19	E12
3V20	E10
3V21	E12
3V22	E10
3V23	E12
3V24	D1
3V25	E1
3V26	D1
3V27	E1
3V28	D1
3V29	E1
3V30	D1
3V31	E1
3V32	E10
3V33	E12
3V34	E10
3V35	E12
3V36	E10
3V37	E12
3V38	E10
3V39	E12
3V40	F10
3V41	F12
3V42	F10
3V43	F12
3V44	F3
3V45	B2
3V46	B2
3V47	B3
3V48	B3
3V49	B3
3V50	B3
3V51	B3
3V52	B3
3V53	B3
3V54	B4
3V55	B4
3V56	B4
3V57	B4
3V58	B4
3V59	B4
3V60	B4
3V61	B5
3V62	B5
3V63	B5
3V64	B5
3V65	B5
3V66	B5
3V67	B5
3V68	B6
3V69	B6
3V70	B6
3V71	B6
3V72	B6
3V73	B6
3V74	B6
3V75	B7
3V76	B7
3V77	H6
3V78	F4
3V79	H8
3V80	H8
5V00	H2
5V01	I2
7V00-2	C5
7V01	D8
7V02	D14
7V03	H7
FV00	H8
FV01	I8
IV01	H2

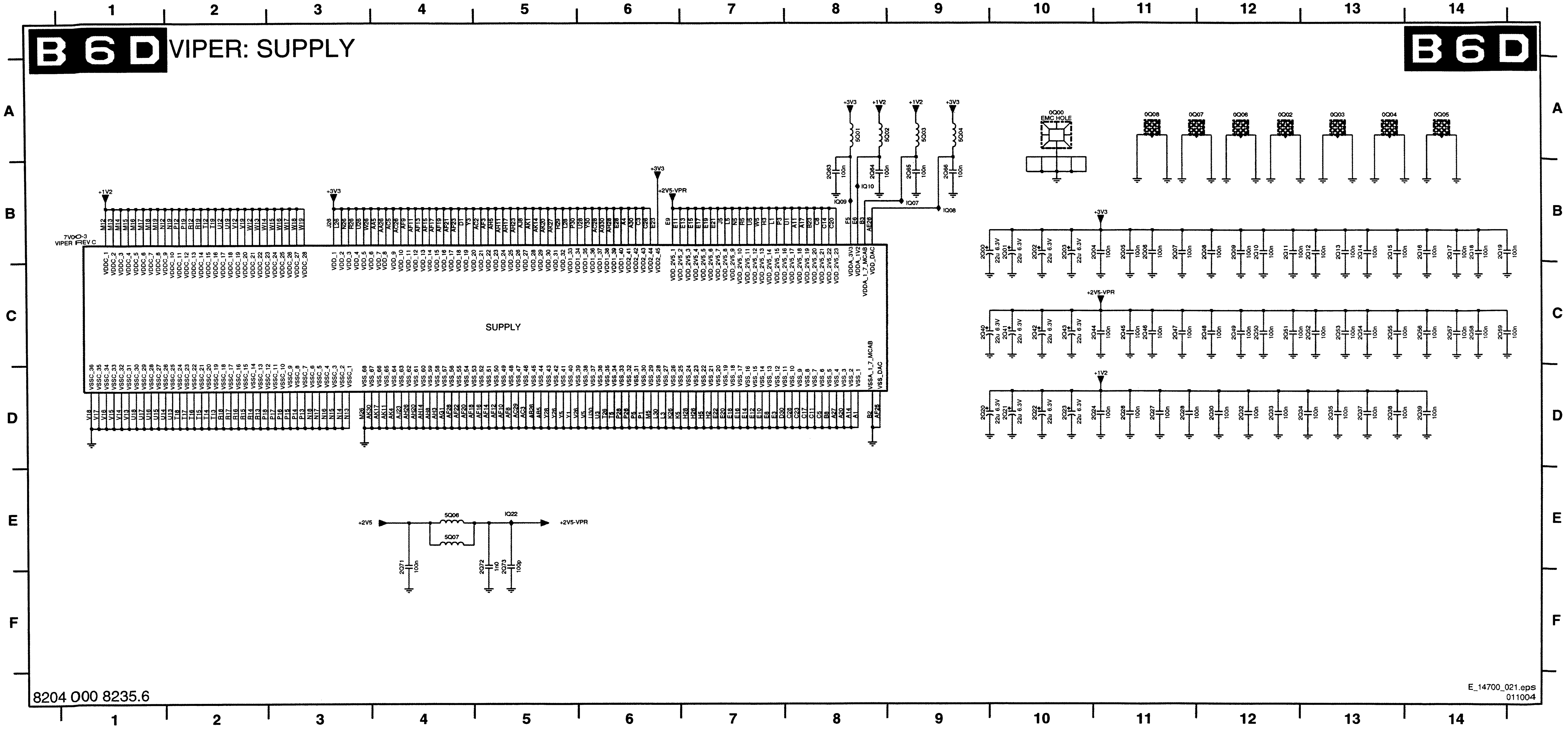
Small Signal Board: Viper: Audio Video *I/O*


B6C
VIPER: AUDIO VIDEO I/O
7V00-1
VIPER REV C
AUDIO/VIDEO
+3V3
DV1A-VALID
DV2A-VALID
DAC-CVBS
C-MON-OUT
SPDIF-OUT1
SPDIF-IN1
7V00-4
VIPER REV C
TUNNELBUS
TUN-VIPER-AVREF
8204 000 8235.6
E_14700_020.eps
011004

2H01	I11
2H04	G8
2H10	E12
2H11	E12
2H12	E12
2Q25	D12
2Q29	D12
2Q31	D12
3H07	E7
3H12	E3
3H14	E3
3H18	C3
3H19	D9
3H20	D9
3H21	D9
3H22	F8
3H23	F8
3H24	F8
3H25	F8
3H27	F8
3H28	B3
3H32	C3
3H33-1	B8
3H33-2	B8
3H33-3	B8
3H33-4	B8
3H34-1	B8
3H34-2	B8
3H34-3	B8
3H34-4	B8
3H35-1	D8
3H35-2	D8
3H35-3	B8
3H35-4	B8
3H36-1	C8
3H36-2	C8
3H36-3	C8
3H36-4	C8
3H37-1	C8
3H37-2	C8
3H37-3	C8
3H37-4	C8
3H38-1	C8
3H38-2	C8
3H38-3	D8
3H38-4	D8
3H39-1	C8
3H39-2	C8
3H39-3	C8
3H39-4	C8
3H40-1	B8
3H40-2	B8
3H41	D8
3H65	D8
3H66	D8
3H67	G8
3H68	G8
3H69	H8
3H76	F8
3H77	F8
3H78	E3
3H80	E4
3H81	E3
3H91	E11
3H92	E11
3H96	E4
3Q00	D11
3Q01	E11
3Q03	D11
3Q06	D11
5H05	D12
5Q05	C12
7V00-1	A6
7V00-4	F12
9H02	F4
9H09	F8
9H17	D4
9H18	E4
9H19	F8
9H20	F9
9H21	G8
IH00	E4
IH01	E4
IH02	E4
IH03	E4
IH04	F8
IH05	G8
IH06	D9
IH07	D8
IH08	D8
IH12	E11
IH13	E12
IH14	E13
IQ00	D11
IQ01	D12
IQ02	D13

Small Signal Board: Viper: Supply

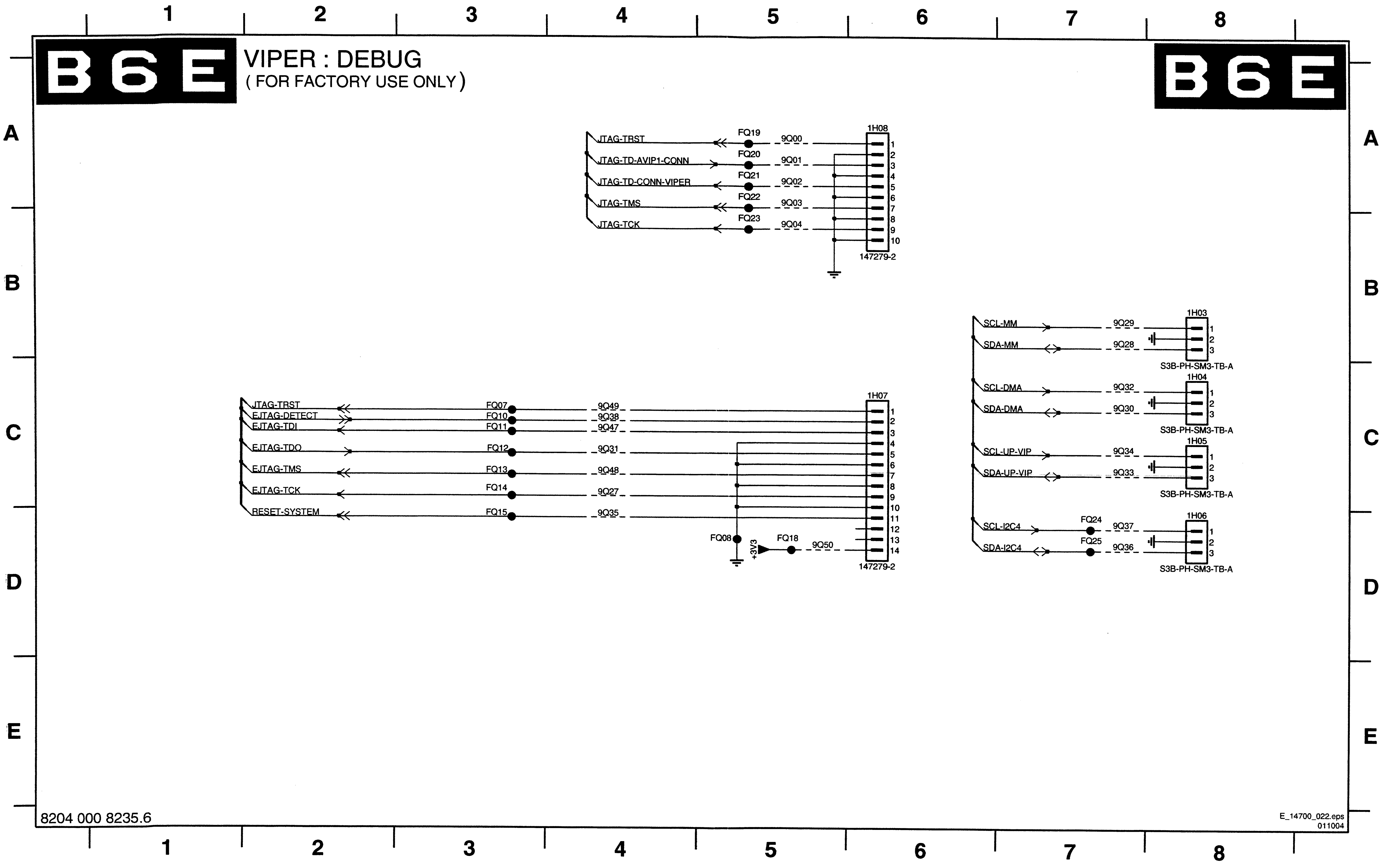
0Q00	A10
0Q02	A12
0Q03	A13
0Q04	A13
0Q05	A14
0Q06	A12
0Q07	A11
0Q08	A11
2Q00	B9
2Q01	B10
2Q02	B10
2Q03	B10
2Q04	B11
2Q05	B11
2Q06	B11
2Q07	B11
2Q08	B12
2Q09	B12
2Q10	B12
2Q11	B12
2Q12	B13
2Q13	B13
2Q14	B13
2Q15	B13
2Q16	B14
2Q17	B14
2Q18	B14
2Q19	B14
2Q20	D9
2Q21	D10
2Q22	D10
2Q23	D10
2Q24	D11
2Q26	D11
2Q27	D11
2Q28	D11
2Q30	D12
2Q32	D12
2Q33	D12
2Q34	D13
2Q35	D13
2Q37	D13
2Q38	D13
2Q39	D14
2Q40	C9
2Q41	C10
2Q42	C10
2Q43	C10
2Q44	C11
2Q45	C11
2Q46	C11
2Q47	C11
2Q48	C12
2Q49	C12
2Q50	C12
2Q51	C12
2Q52	C13
2Q53	C13
2Q54	C13
2Q55	C13
2Q56	C14
2Q57	C14
2Q58	C14
2Q59	C14
2Q63	B8
2Q64	B8
2Q65	B9
2Q66	B9
2Q71	E4
2Q72	E5
2Q73	E5
5Q01	A8
5Q02	A8
5Q03	A9
5Q04	A9
5Q06	E4
5Q07	E4
7V00-3	B1
IQ07	B9
IQ08	B9
IQ09	B8
IQ10	B8
IQ22	E5


B6D
VIPER: SUPPLY
B6D
7V00-3
VIPER REV C
SUPPLY
+1V2
+3V3
+2V5-VPR
+2V5
5Q01
5Q02
5Q03
5Q04
5Q06
5Q07
0Q00
EMC HOLE
0Q08
0Q07
0Q06
0Q02
0Q03
0Q04
0Q05
IQ07
IQ08
IQ09
IQ10
IQ22
2Q71
2Q72
2Q73
100n
22u 6.3V
1n0
100p
VDDA_3V3
VDDA_1V2
VDDA_1_7_MCAB
VDD_DAC
VSSA_1_7_MCAB
VSS_DAC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F

8204 000 8235.6

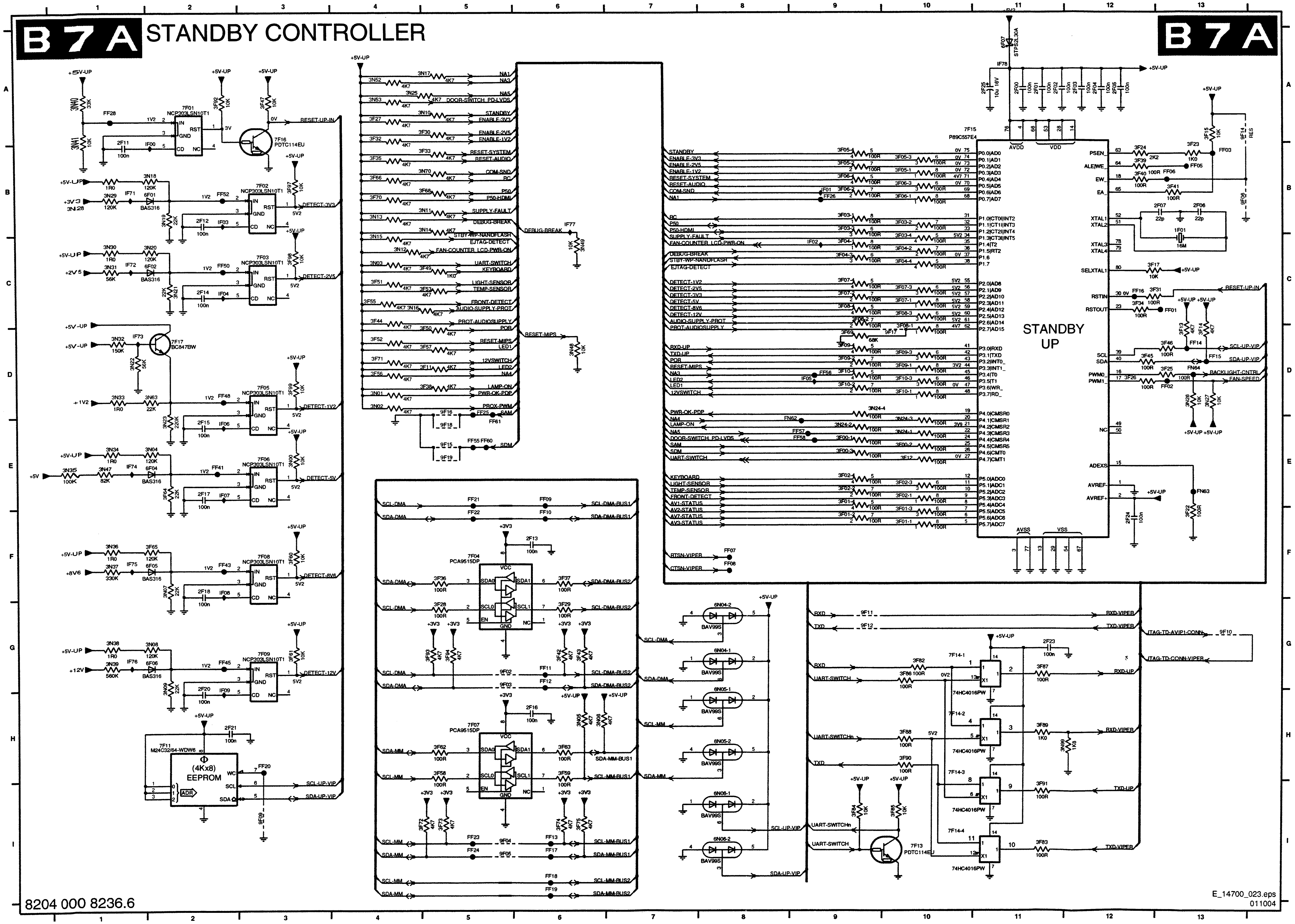
E_14700_021.eps
011004

Small Signal Board: Viper: Debug


B6E
VIPER : DEBUG
(FOR FACTORY USE ONLY)
JTAG-TRST
JTAG-TD-AVIP1-CONN
JTAG-TD-CONN-VIPER
JTAG-TMS
JTAG-TCK
FQ19
FQ20
FQ21
FQ22
FQ23
9Q00
9Q01
9Q02
9Q03
9Q04
1H08
147279-2
EJTAG-DETECT
EJTAG-TDI
EJTAG-TDO
EJTAG-TMS
EJTAG-TCK
RESET-SYSTEM
FQ07
FQ10
FQ11
FQ12
FQ13
FQ14
FQ15
9Q49
9Q38
9Q47
9Q31
9Q48
9Q27
9Q35
FQ08
+3V3
FQ18
9Q50
1H07
147279-2
SCL-MM
SDA-MM
9Q29
9Q28
1H03
S3B-PH-SM3-TB-A
SCL-DMA
SDA-DMA
9Q32
9Q30
1H04
S3B-PH-SM3-TB-A
SCL-UP-VIP
SDA-UP-VIP
9Q34
9Q33
1H05
S3B-PH-SM3-TB-A
SCL-I2C4
SDA-I2C4
FQ24
FQ25
9Q37
9Q36
1H06
S3B-PH-SM3-TB-A
1 2 3 4 5 6 7 8
A B C D E
8204 000 8235.6
E_14700_022.eps
011004

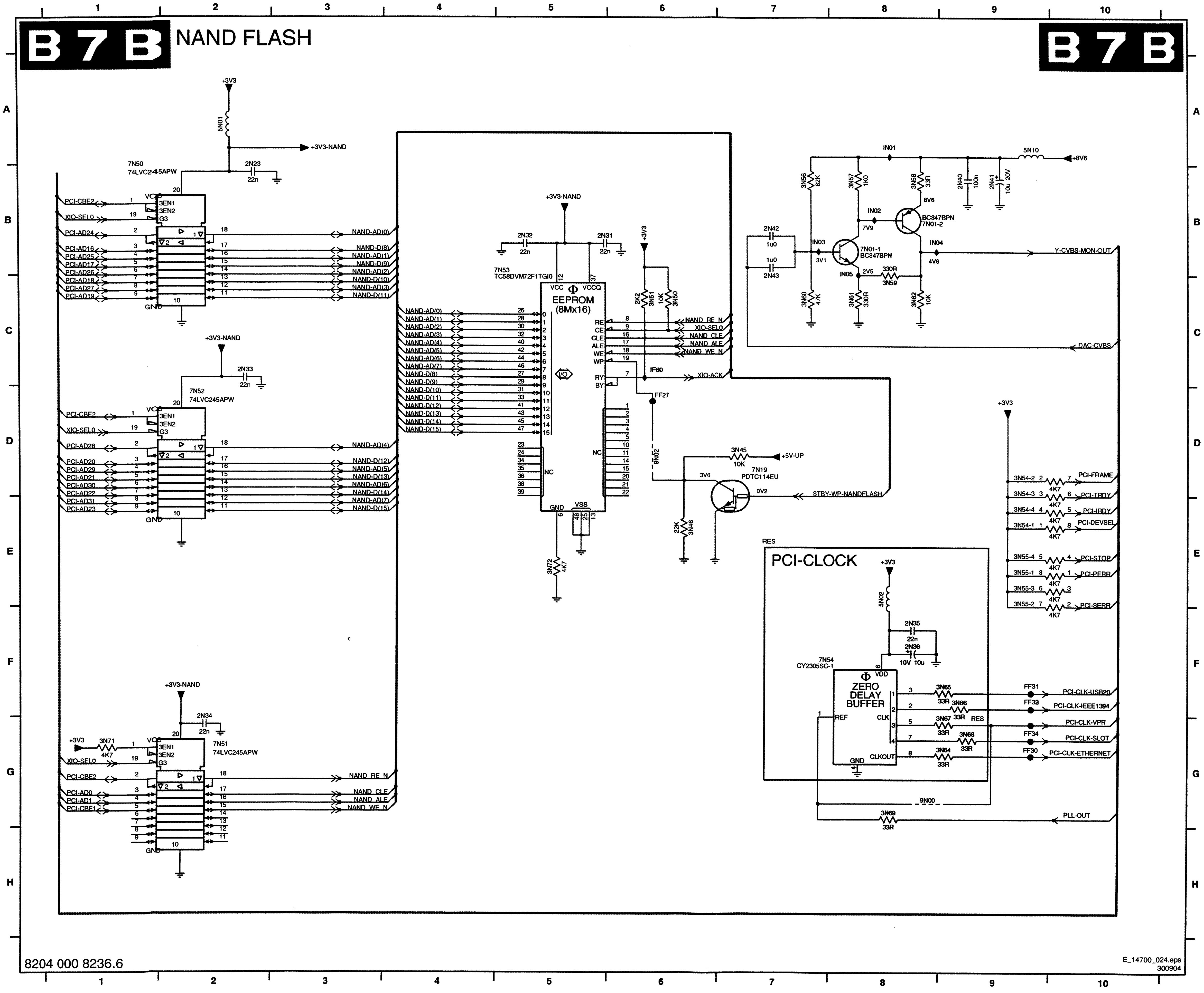
1H03	B8
1H04	C8
1H05	C8
1H06	D8
1H07	C6
1H08	A6
9Q00	A5
9Q01	A5
9Q02	A5
9Q03	A5
9Q04	B5
9Q27	C4
9Q28	B7
9Q29	B7
9Q30	C7
9Q31	C4
9Q32	C7
9Q33	C7
9Q34	C7
9Q35	D4
9Q36	D7
9Q37	D7
9Q38	C4
9Q47	C4
9Q48	C4
9Q49	C4
9Q50	D5
FQ07	C3
FQ08	D5
FQ10	C3
FQ11	C3
FQ12	C3
FQ13	C3
FQ14	C3
FQ15	D3
FQ18	D5
FQ19	A5
FQ20	A5
FQ21	A5
FQ22	A5
FQ23	B5
FQ24	D7
FQ25	D7

Small Signal Board: Standby Controller


B7A STANDBY CONTROLLER
B7A
STANDBY UP
7F15 P89C557E4
7F01 NCP303LSN10T1
7F02 NCP303LSN10T1
7F03 NCP303LSN10T1
7F05 NCP303LSN10T1
7F06 NCP303LSN10T1
7F08 NCP303LSN10T1
7F09 NCP303LSN10T1
7F16 PDTC114EU
7F17 BC847BW
7F04 PCA9515DP
7F07 PCA9515DP
7F11 M24C32/64-WDW6
(4Kx8) EEPROM
7F13 PDTC114EU
74HC4016PW
BAV99S
RESET-UP-IN
DETECT-3V3
DETECT-2V5
DETECT-1V2
DETECT-5V
DETECT-8V6
DETECT-12V
STANDBY
ENABLE-3V3
ENABLE-2V5
ENABLE-1V2
RESET-SYSTEM
RESET-AUDIO
COM-SND
DEBUG-BREAK
STBY-WP-NANDFLASH
EJTAG-DETECT
FAN-COUNTER LCD-PWB-ON
UART-SWITCH
KEYBOARD
LIGHT-SENSOR
TEMP-SENSOR
FRONT-DETECT
AUDIO-SUPPLY-PROT
PROT-AUDIOSUPPLY
POR
RESET-MIPS
12VSWITCH
LAMP-ON
PWB-OK-PDP
PROX-PWM
SAM
SDM
SCL-DMA
SDA-DMA
SCL-MM
SDA-MM
SCL-DMA-BUS1
SDA-DMA-BUS1
SCL-DMA-BUS2
SDA-DMA-BUS2
SCL-MM-BUS1
SDA-MM-BUS1
SCL-MM-BUS2
SDA-MM-BUS2
SCL-UP-VIP
SDA-UP-VIP
RXD-VIPER
TXD-VIPER
RXD-UP
TXD-UP
RTSN-VIPER
CTSN-VIPER
JTAG-TD-AVIP1-CONN
JTAG-TD-CONN-VIPER
BACKLIGHT-CNTRL
FAN-SPEED
+5V-UP
+3V3
8204 000 8236.6
E_14700_023.eps
011004

1F01	B13
2F00	A11
2F01	A11
2F02	A11
2F03	A12
2F04	A12
2F05	A12
2F06	B13
2F07	B13
2F11	A1
2F12	B2
2F13	F6
2F14	C2
2F15	E2
2F16	H6
2F17	E2
2F18	F2
2F20	G2
2F21	H2
2F23	G11
2F24	F12
2F25	A11
3F00-1	E9
3F00-2	E10
3F00-3	E9
3F01-1	F10
3F01-2	F9
3F01-3	F10
3F01-4	E9
3F02-1	E10
3F02-2	E9
3F02-3	E10
3F02-4	E9
3F03-1	B9
3F03-2	B10
3F03-3	B9
3F03-4	C10
3F04-1	C9
3F04-2	C10
3F04-3	C9
3F04-4	C10
3F05-1	B10
3F05-2	B9
3F05-3	B10
3F05-4	B9
3F06-1	B10
3F06-2	B9
3F06-3	B10
3F06-4	B9
3F07-1	C10
3F07-2	C9
3F07-3	C10
3F07-4	C9
3F08-1	D10
3F08-2	C9
3F08-3	C10
3F08-4	C9
3F09-1	D10
3F09-2	D9
3F09-3	D10
3F09-4	D9
3F10-1	D10
3F10-2	D9
3F10-3	D10
3F10-4	D9
3F11	D5
3F12	E10
3F13	D13
3F14	D13
3F15	A13
3F17	C12
3F22	F13
3F23	B13
3F24	B12
3F25	D13
3F26	D12
3F27	A4
3F28	G5
3F29	G6
3F30	A5
3F31	C12
3F32	A4
3F33	B5
3F34	C12
3F35	B4
3F36	F5
3F37	F6
3F38	D5
3F39	B12
3F40	B12
3F41	B13
3F42	G6
3F43	G6
3F44	C4
3F45	D12
3F46	D13
3F47	A3
3F49	C5
3F50	D5
3F51	C4
3F52	D4
3F53	C5
3F55	C4
3F56	D4
3F57	D5
3F58	H5
3F59	H6
3F60	F3
3F61	G3
3F62	H5
3F63	H6
3F64	E2
3F65	F2
3F66	B4
3F68	B5
3F69	D9
3F70	B4
3F71	D4
3F72	I4
3F73	I5
3F74	I6
3F75	I6
3F82	G10
3F83	I11
3F84	I9
3F85	I10
3F86	G10
3F87	G11
3F88	H10
3F89	H11
3F90	H10
3F91	I11
3F92	A2
3F93	G5
3F94	G5
3F97	B3
3F98	C3
3F99	D3
3N00	E3
3N01	D4
3N02	D4
3N03	C4
3N04	E2
3N05	H6
3N06	H6
3N07	F2
3N08	G2
3N09	G2
3N10	A5
3N11	B5
3N12	C4
3N13	B4
3N14	B5
3N15	C4
3N16	C4
3N17	A5
3N18	B2
3N19	B2
3N20	C2
3N21	C2
3N22	D1
3N23	E2
3N24-1	E10
3N24-2	E9
3N24-3	E10
3N24-4	D9
3N25	A4
3N26	D13
3N27	D13
3N28	B1
3N29	B1
3N30	C1
3N31	C1
3N32	D1
3N33	D1
3N34	E1
3N35	E1
3N36	F1
3N37	F1
3N38	G1
3N39	G1
3N40	A1
3N41	A1
3N47	E1
3N48	D6
3N49	C6
3N52	A4
3N53	A4
3N63	D2
3N70	B5
3N99	H11
6F01	B2
6F02	C2
6F04	E2
6F05	F2
6F06	G2
6F07	A11
6N04-1	G8
6N04-2	G8
6N05-1	H8
6N05-2	H8
6N06-1	I8
6N06-2	I8
7F01	A2
7F02	B3
7F03	C3
7F04	F5
7F05	D3
7F06	E3
7F07	H5
7F08	F3
7F09	G3
7F11	H2
7F13	I10
7F14-1	G10
7F14-2	H10
7F14-3	H10
7F14-4	I10
7F15	A11
7F16	A3
7F17	D2
9F02	G5
9F03	G5
9F04	I5
9F05	I5
9F06	B13
9F09	I3
9F10	G13
9F11	G9
9F12	G9
9F14	A13
9F15	E5
9F16	D5
9F17	D10
9F18	E5
9F19	E5
FF01	C13
FF02	D13
FF03	B13
FF05	B13
FF06	B13
FF07	F8
FF08	F8
FF09	E6
FF10	F6
FF11	G6
FF12	G6
FF13	I6
FF14	D13
FF15	D13
FF16	C12
FF17	I6
FF18	I6
FF19	I6
FF20	H3
FF21	E5
FF22	F5
FF23	I5
FF24	I5
FF25	D5
FF26	B9
FF28	A1
FF41	E2
FF43	F2
FF45	G2
FF48	D2
FF50	C2
FF52	B2
FF55	E5
FF56	D9
FF57	E9
FF58	E9
FF60	E5
FF61	E5
FN62	E8
FN63	E13
FN64	D13
IF00	A2
IF01	B9
IF02	C9
IF03	B2
IF04	C2
IF05	D9
IF06	E2
IF07	E2
IF08	F2
IF09	G2
IF71	B1
IF72	C1
IF73	D1
IF74	E1
IF75	F1
IF76	G1
IF77	B6
IF78	A11

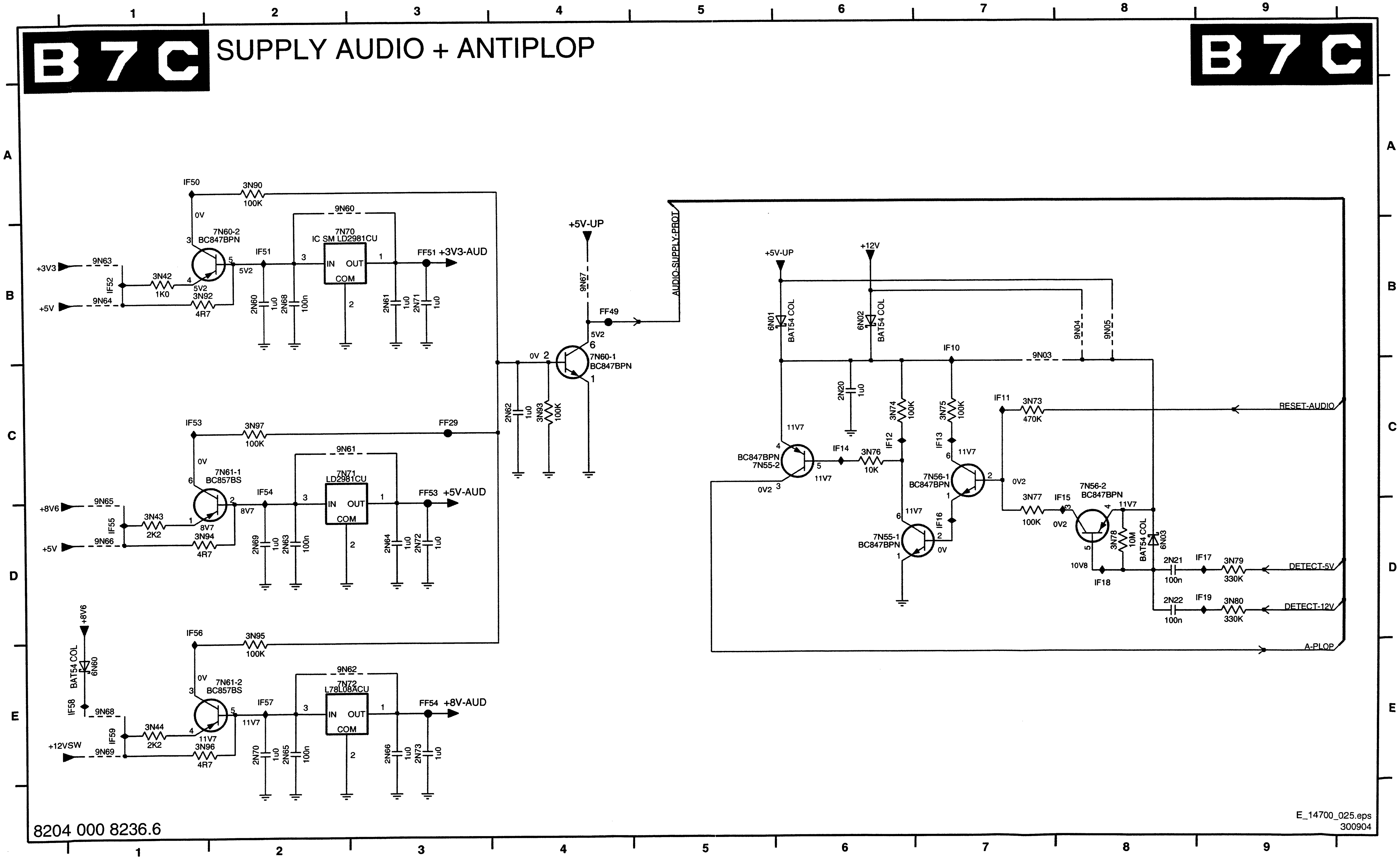
Small Signal Board: NAND Flash


B 7 B
NAND FLASH
B 7 B
+3V3
5N01
+3V3-NAND
7N50
74LVC245APW
2N23
22n
PCI-CBE2
XIO-SEL0
PCI-AD24
PCI-AD16
PCI-AD25
PCI-AD17
PCI-AD26
PCI-AD18
PCI-AD27
PCI-AD19
NAND-AD(0)
NAND-D(8)
NAND-AD(1)
NAND-D(9)
NAND-AD(2)
NAND-D(10)
NAND-AD(3)
NAND-D(11)
7N52
74LVC245APW
2N33
PCI-AD28
PCI-AD20
PCI-AD29
PCI-AD21
PCI-AD30
PCI-AD22
PCI-AD31
PCI-AD23
NAND-AD(4)
NAND-D(12)
NAND-AD(5)
NAND-D(13)
NAND-AD(6)
NAND-D(14)
NAND-AD(7)
NAND-D(15)
7N51
74LVC245APW
2N34
3N71
4K7
PCI-AD0
PCI-AD1
PCI-CBE1
NAND_RE_N
NAND_CLE
NAND_ALE
NAND_WE_N
7N53
TC58DVM72F1TGI0
2N32
2N31
EEPROM
(8Mx16)
VCC
VCCQ
RE
CE
CLE
ALE
WE
WP
RY
BY
NC
GND
VSS
3N72
4K7
3N51
2K2
3N50
10K
XIO-SEL0
XIO-ACK
IF60
FF27
9N02
3N45
10K
+5V-UP
7N19
PDTC114EU
3V6
0V2
3N46
22K
STBY-WP-NANDFLASH
IN01
5N10
+8V6
3N56
82K
3N57
1K0
3N58
33R
2N40
100n
2N41
10u 20V
2N42
1u0
2N43
IN02
IN03
IN04
IN05
7V9
8V6
3V1
2V5
4V6
7N01-1
BC847BPN
7N01-2
BC847BPN
330R
3N59
3N60
47K
3N61
330R
3N62
10K
Y-CVBS-MON-OUT
DAC-CVBS
+3V3
3N54-2
3N54-3
3N54-4
3N54-1
3N55-4
3N55-1
3N55-3
3N55-2
4K7
PCI-FRAME
PCI-TRDY
PCI-IRDY
PCI-DEVSEL
PCI-STOP
PCI-PERR
PCI-SERR
RES
PCI-CLOCK
5N02
2N35
22n
2N36
10V 10u
7N54
CY2305SC-1
ZERO
DELAY
BUFFER
VDD
REF
CLK
CLKOUT
GND
3N65
3N66
3N67
3N68
3N64
33R
FF31
FF32
FF34
FF30
PCI-CLK-USB20
PCI-CLK-IEEE1394
PCI-CLK-VPR
PCI-CLK-SLOT
PCI-CLK-ETHERNET
9N00
3N69
PLL-OUT
8204 000 8236.6
E_14700_024.eps
300904

2N23	B2
2N31	B5
2N32	B5
2N33	C2
2N34	G2
2N35	F8
2N36	F8
2N40	B9
2N41	B9
2N42	B7
2N43	B7
3N45	D7
3N46	E6
3N50	C6
3N51	C6
3N54-1	E9
3N54-2	D9
3N54-3	D9
3N54-4	E9
3N55-1	E9
3N55-2	E9
3N55-3	E9
3N55-4	E9
3N56	B7
3N57	B8
3N58	B8
3N59	C8
3N60	C7
3N61	C8
3N62	C8
3N64	G9
3N65	F9
3N66	F9
3N67	G9
3N68	G9
3N69	G8
3N71	G1
3N72	E5
5N01	A2
5N02	E8
5N10	A9
7N01-1	B8
7N01-2	B8
7N19	D7
7N50	B1
7N51	G2
7N52	D2
7N53	B4
7N54	F8
9N00	G8
9N02	D6
FF27	D6
FF30	G9
FF31	F9
FF32	F9
FF33	F9
FF34	G9
IF60	C6
IN01	A8
IN02	B8
IN03	B7
IN04	B8
IN05	B8

Small Signal Board: Supply Audio + Antiplop

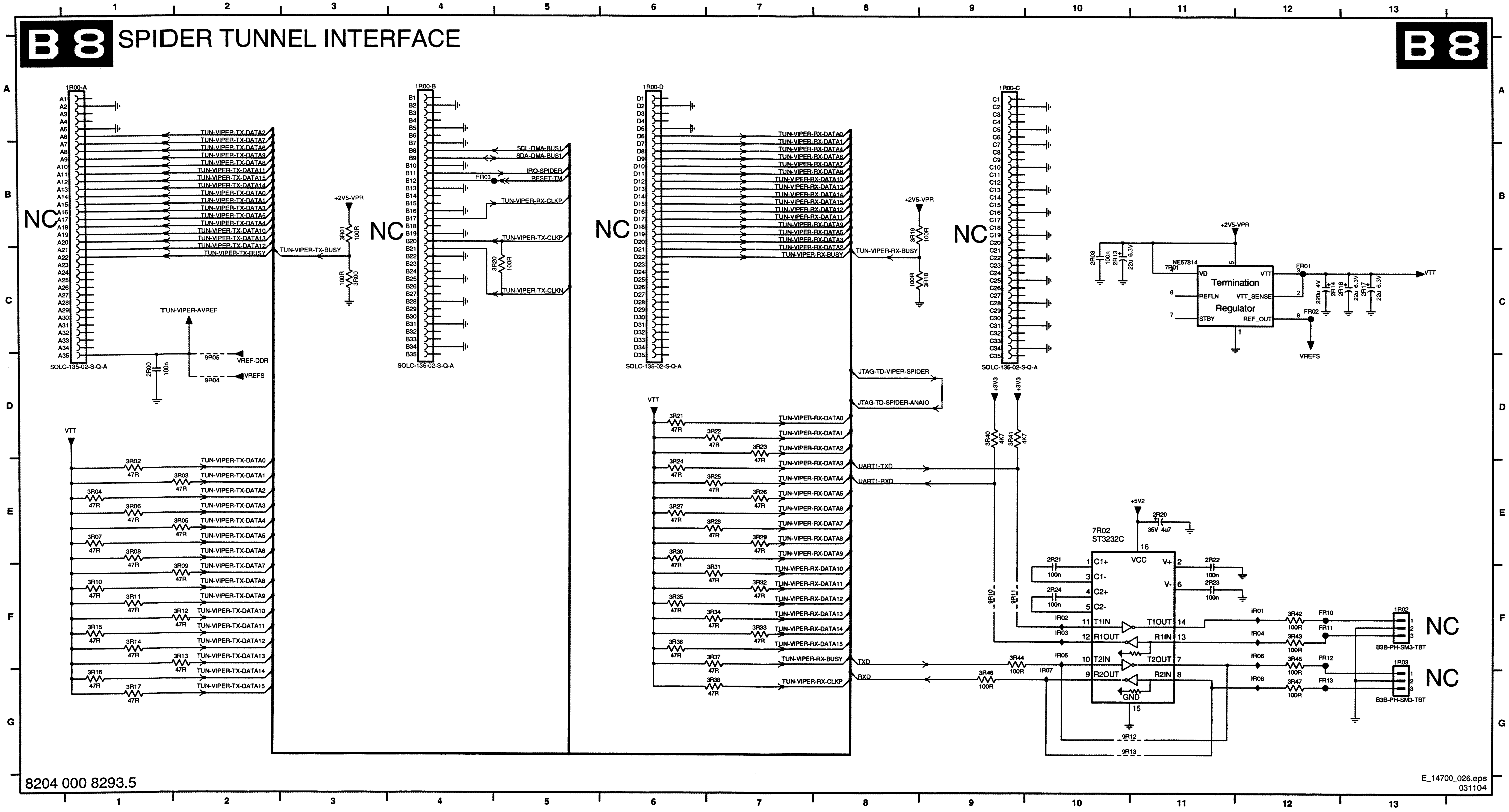
2N20 C6
2N21 D8
2N22 D8
2N60 B2
2N61 B3
2N62 C4
2N63 D2
2N64 D3
2N65 E2
2N66 E3
2N68 B2
2N69 D2
2N70 E2
2N71 B3
2N72 D3
2N73 E3
3N42 B1
3N43 D1
3N44 E1
3N73 C7
3N74 C6
3N75 C7
3N76 C6
3N77 C7
3N78 D8
3N79 D9
3N80 D9
3N90 A2
3N92 B1
3N93 C4
3N94 D1
3N95 D2
3N96 E1
3N97 C2
6N01 B5
6N02 B6
6N03 D8
6N60 E1
7N55-1 D6
7N55-2 C6
7N56-1 C7
7N56-2 C8
7N60-1 B4
7N60-2 B2
7N61-1 C2
7N61-2 E2
7N70 B2
7N71 C2
7N72 E2
9N03 C7
9N04 B8
9N05 B8
9N60 A2
9N61 C2
9N62 E2
9N63 B1
9N64 B1
9N65 D1
9N66 D1
9N67 B4
9N68 E1
9N69 E1
FF29 C3
FF49 B4
FF51 B3
FF53 C3
FF54 E3
IF10 B7
IF11 C7
IF12 C6
IF13 C7
IF14 C6
IF15 C8
IF16 D7
IF17 D9
IF18 D8
IF19 D9
IF50 A1
IF51 B2
IF52 B1
IF53 C1
IF54 C2
IF55 D1
IF56 D1
IF57 E2
IF58 E1
IF59 E1



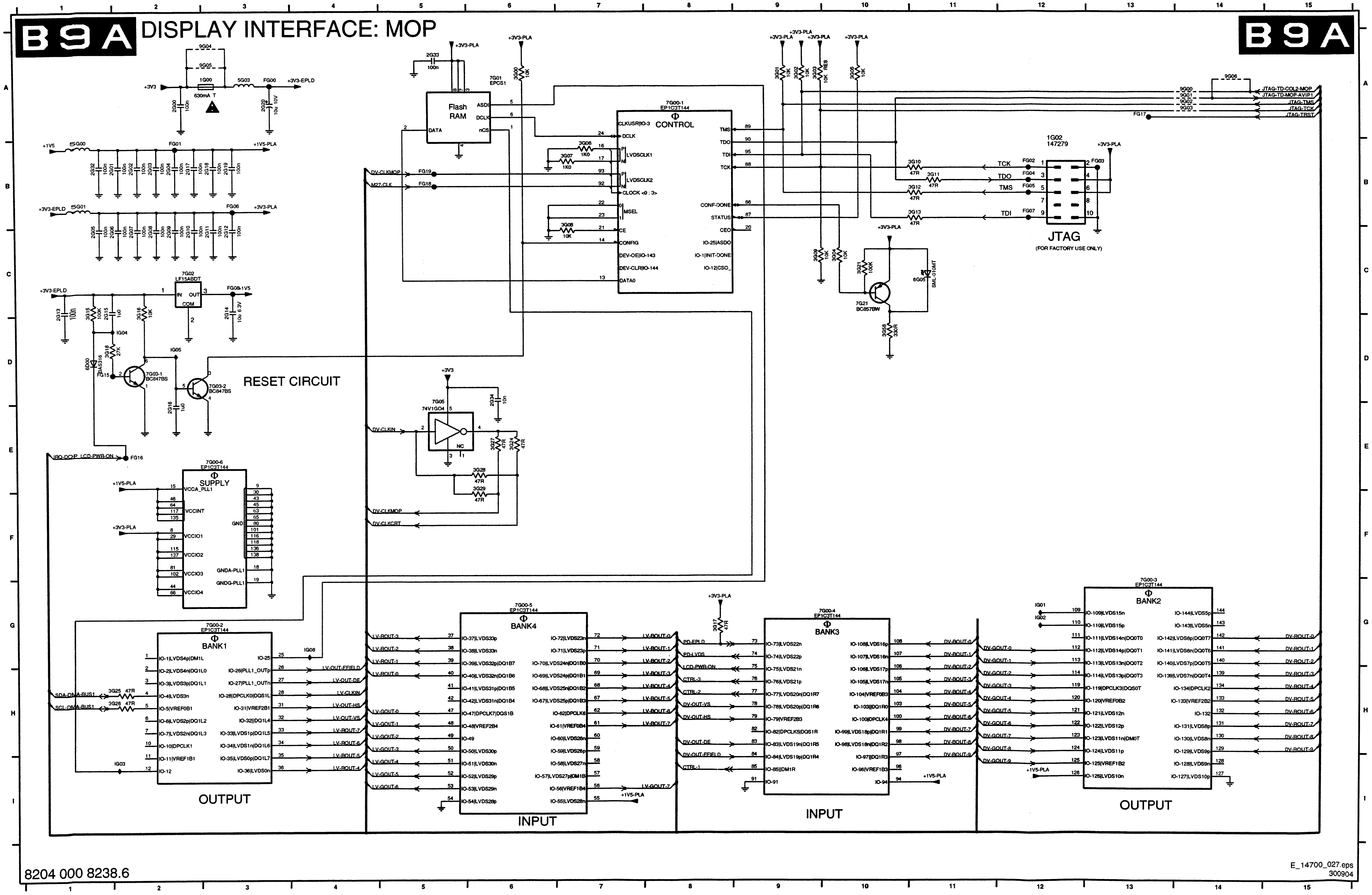
B7C
SUPPLY AUDIO + ANTIPLOP
B7C
1 2 3 4 5 6 7 8 9
A B C D E
IF50
3N90
100K
0V
9N60
7N70
IC SM LD2981CU
7N60-2
BC847BPN
+3V3
9N63
IF52
3N42
1K0
5V2
+5V
9N64
3N92
4R7
IF51
5V2
IN OUT
COM
FF51 +3V3-AUD
2N60 1u0
2N68 100n
2N61 1u0
2N71 1u0
+5V-UP
9N67
FF49
5V2
0V
7N60-1
BC847BPN
AUDIO-SUPPLY-PROT
2N62 1u0
3N93 100K
IF53
3N97
100K
FF29
0V
7N61-1
BC857BS
9N61
7N71
LD2981CU
+8V6
9N65
IF55
3N43
2K2
8V7
+5V
9N66
3N94
4R7
IF54
8V7
FF53 +5V-AUD
2N69 1u0
2N63 100n
2N64 1u0
2N72 1u0
+8V6
BAT54 COL
6N60
IF58
9N68
IF56
3N95
100K
0V
7N61-2
BC857BS
9N62
7N72
L78L08ACU
IF59
3N44
2K2
11V7
+12VSW
9N69
3N96
4R7
IF57
11V7
FF54 +8V-AUD
2N70 1u0
2N65 100n
2N66 1u0
2N73 1u0
+5V-UP
+12V
6N01
BAT54 COL
6N02
BAT54 COL
9N04
9N05
IF10
9N03
2N20 1u0
3N74 100K
3N75 100K
IF11
3N73
470K
RESET-AUDIO
11V7
IF12
IF13
11V7
BC847BPN
7N55-2
IF14
3N76
10K
11V7
0V2
7N56-1
BC847BPN
0V2
3N77
100K
IF15
0V2
7N56-2
BC847BPN
11V7
IF16
11V7
7N55-1
BC847BPN
0V
3N78 10M
BAT54 COL
6N03
10V8
IF18
2N21
100n
IF17
3N79
330K
DETECT-5V
2N22
100n
IF19
3N80
330K
DETECT-12V
A-PLOP
8204 000 8236.6
E_14700_025.eps
300904

Small Signal Board: Spider Tunnel Interface (Optional)

1R00-A A1
1R00-B A4
1R00-C A9
1R00-D A6
1R02 F13
1R03 F13
2R00 D1
2R03 C10
2R13 C10
2R14 C12
2R16 C13
2R17 C13
2R20 E11
2R21 E10
2R22 E11
2R23 F11
2R24 F10
3R00 C3
3R01 B3
3R02 E1
3R03 E2
3R04 E1
3R05 E2
3R06 E1
3R07 E1
3R08 E1
3R09 F2
3R10 F1
3R11 F1
3R12 F2
3R13 F2
3R14 F1
3R15 F1
3R16 G1
3R17 G1
3R18 C9
3R19 B8
3R20 C5
3R21 D6
3R22 D7
3R23 D7
3R24 E6
3R25 E7
3R26 E7
3R27 E6
3R28 E7
3R29 E7
3R30 E6
3R31 F7
3R32 F7
3R33 F7
3R34 F7
3R35 F6
3R36 F6
3R37 F7
3R38 G7
3R40 D9
3R41 D9
3R42 F12
3R43 F12
3R44 F9
3R45 F12
3R46 G9
3R47 G12
7R01 C11
7R02 E10
9R04 D2
9R05 D2
9R10 F9
9R11 F9
9R12 G10
9R13 G10
FR01 C12
FR02 C12
FR03 B4
FR10 F12
FR11 F12
FR12 F12
FR13 G12
IR01 F12
IR02 F10
IR03 F10
IR04 F12
IR05 F10
IR06 F12
IR07 G10
IR08 G12


B8 SPIDER TUNNEL INTERFACE
B8
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G
1R00-A
1R00-B
1R00-D
1R00-C
SOLC-135-02-S-Q-A
NC
TUN-VIPER-TX-DATA2
TUN-VIPER-TX-DATA7
TUN-VIPER-TX-DATA6
TUN-VIPER-TX-DATA9
TUN-VIPER-TX-DATA8
TUN-VIPER-TX-DATA11
TUN-VIPER-TX-DATA15
TUN-VIPER-TX-DATA14
TUN-VIPER-TX-DATA0
TUN-VIPER-TX-DATA1
TUN-VIPER-TX-DATA3
TUN-VIPER-TX-DATA5
TUN-VIPER-TX-DATA4
TUN-VIPER-TX-DATA10
TUN-VIPER-TX-DATA13
TUN-VIPER-TX-DATA12
TUN-VIPER-TX-BUSY
TUN-VIPER-AVREF
2R00 100n
9R05 VREF-DDR
9R04 VREFS
+2V5-VPR
3R01 100R
3R00 100R
SCL-DMA-BUS1
SDA-DMA-BUS1
IRQ-SPIDER
FR03 RESET-TM
TUN-VIPER-RX-CLKP
TUN-VIPER-TX-CLKP
3R20 100R
TUN-VIPER-TX-CLKN
TUN-VIPER-RX-DATA0
TUN-VIPER-RX-DATA1
TUN-VIPER-RX-DATA4
TUN-VIPER-RX-DATA6
TUN-VIPER-RX-DATA7
TUN-VIPER-RX-DATA8
TUN-VIPER-RX-DATA10
TUN-VIPER-RX-DATA13
TUN-VIPER-RX-DATA14
TUN-VIPER-RX-DATA15
TUN-VIPER-RX-DATA12
TUN-VIPER-RX-DATA11
TUN-VIPER-RX-DATA9
TUN-VIPER-RX-DATA5
TUN-VIPER-RX-DATA3
TUN-VIPER-RX-DATA2
TUN-VIPER-RX-BUSY
3R19 100R
3R18 100R
2R03 100n
2R13 22u 6.3V
NE57814
7R01
VD
VTT
Termination
Regulator
REFLN
VTT_SENSE
STBY
REF_OUT
FR01
FR02
VREFS
220u 4V 2R14
2R16 22u 6.3V
2R17 22u 6.3V
VTT
JTAG-TD-VIPER-SPIDER
JTAG-TD-SPIDER-ANAIO
+3V3
3R40 4K7
3R41 4K7
UART1-TXD
UART1-RXD
VTT
3R02 47R
3R03 47R
3R04 47R
3R05 47R
3R06 47R
3R07 47R
3R08 47R
3R09 47R
3R10 47R
3R11 47R
3R12 47R
3R13 47R
3R14 47R
3R15 47R
3R16 47R
3R17 47R
3R21 47R
3R22 47R
3R23 47R
3R24 47R
3R25 47R
3R26 47R
3R27 47R
3R28 47R
3R29 47R
3R30 47R
3R31 47R
3R32 47R
3R33 47R
3R34 47R
3R35 47R
3R36 47R
3R37 47R
3R38 47R
TXD
RXD
+5V2
2R20 35V 4u7
7R02
ST3232C
VCC
C1+ C1- C2+ C2-
V+ V-
2R21 100n
2R24 100n
2R22 100n
2R23 100n
T1IN R1OUT T2IN R2OUT
T1OUT R1IN T2OUT R2IN
GND
9R10
9R11
IR01 IR02 IR03 IR04 IR05 IR06 IR07 IR08
3R42 100R
3R43 100R
3R44 100R
3R45 100R
3R46 100R
3R47 100R
FR10 FR11 FR12 FR13
9R12
9R13
1R02
1R03
B3B-PH-SM3-TBT
8204 000 8293.5
E_14700_026.eps
031104

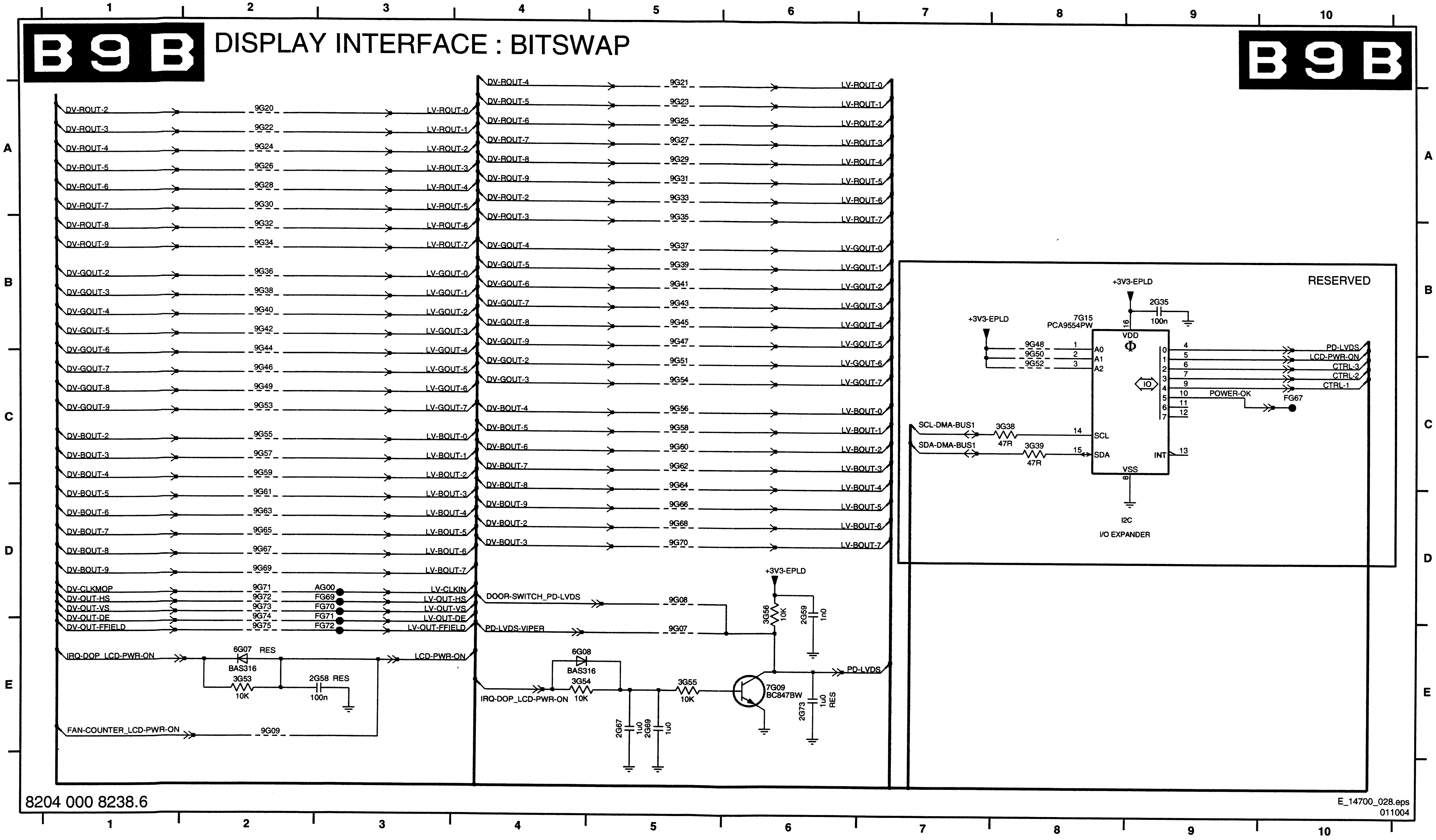
Small Signal Board: Display Interface: MOP (Optional)


B9A
DISPLAY INTERFACE: MOP
B9A
Flash RAM
7G01 EPCS1
7G00-1 EP1C3T144
CONTROL
1G02 147279
JTAG
(FOR FACTORY USE ONLY)
7G02 LF15ABDT
RESET CIRCUIT
7G03-1 BC847BS
7G03-2 BC847BS
7G05 74V1GO4
7G21 BC857BW
7G00-6 EP1C3T144
SUPPLY
7G00-2 EP1C3T144
BANK1
OUTPUT
7G00-5 EP1C3T144
BANK4
INPUT
7G00-4 EP1C3T144
BANK3
INPUT
7G00-3 EP1C3T144
BANK2
OUTPUT
+3V3-PLA
+3V3-EPLD
+1V5-PLA
TCK
TDO
TMS
TDI
JTAG-TD-COL2-MOP
JTAG-TD-MOP-AVIP1
JTAG-TMS
JTAG-TCK
JTAG-TRST
8204 000 8238.6
E_14700_027.eps
300904

1G00	A3
1G02	B12
2G00	A2
2G01	B2
2G02	B2
2G03	B2
2G04	B2
2G05	C1
2G06	C2
2G07	C2
2G08	C2
2G09	C2
2G10	C2
2G11	C3
2G12	C3
2G13	C1
2G14	C3
2G15	C1
2G16	E2
2G17	B2
2G18	B3
2G19	B3
2G20	A3
2G32	B1
2G33	A5
2G34	D6
3G00	A6
3G01	A9
3G02	A9
3G03	A9
3G04	C10
3G05	A10
3G06	B7
3G07	B7
3G08	B7
3G09	C9
3G10	B11
3G11	B11
3G12	B11
3G13	B11
3G15	C1
3G16	C2
3G17	G8
3G18	D1
3G21	C10
3G24	E6
3G25	H1
3G26	H1
3G27	E6
3G28	E6
3G29	E6
3G58	D10
5G00	B1
5G01	B1
5G03	A3
6D00	D1
6G05	C11
7G00-1	A8
7G00-2	G3
7G00-3	G13
7G00-4	G10
7G00-5	G6
7G00-6	E3
7G01	A6
7G02	C2
7G03-1	D2
7G03-2	D3
7G05	E5
7G21	C10
9G00	A14
9G01	A14
9G02	A14
9G03	A14
9G04	A3
9G05	A3
9G06	A14
FG00	A3
FG01	B2
FG02	B12
FG03	B13
FG04	B12
FG05	B12
FG06	B3
FG07	B12
FG08	C3
FG15	D1
FG16	E2
FG17	A13
FG18	B5
FG19	B5
IG01	G12
IG02	G12
IG03	I2
IG04	D2
IG05	D2
IG08	G4

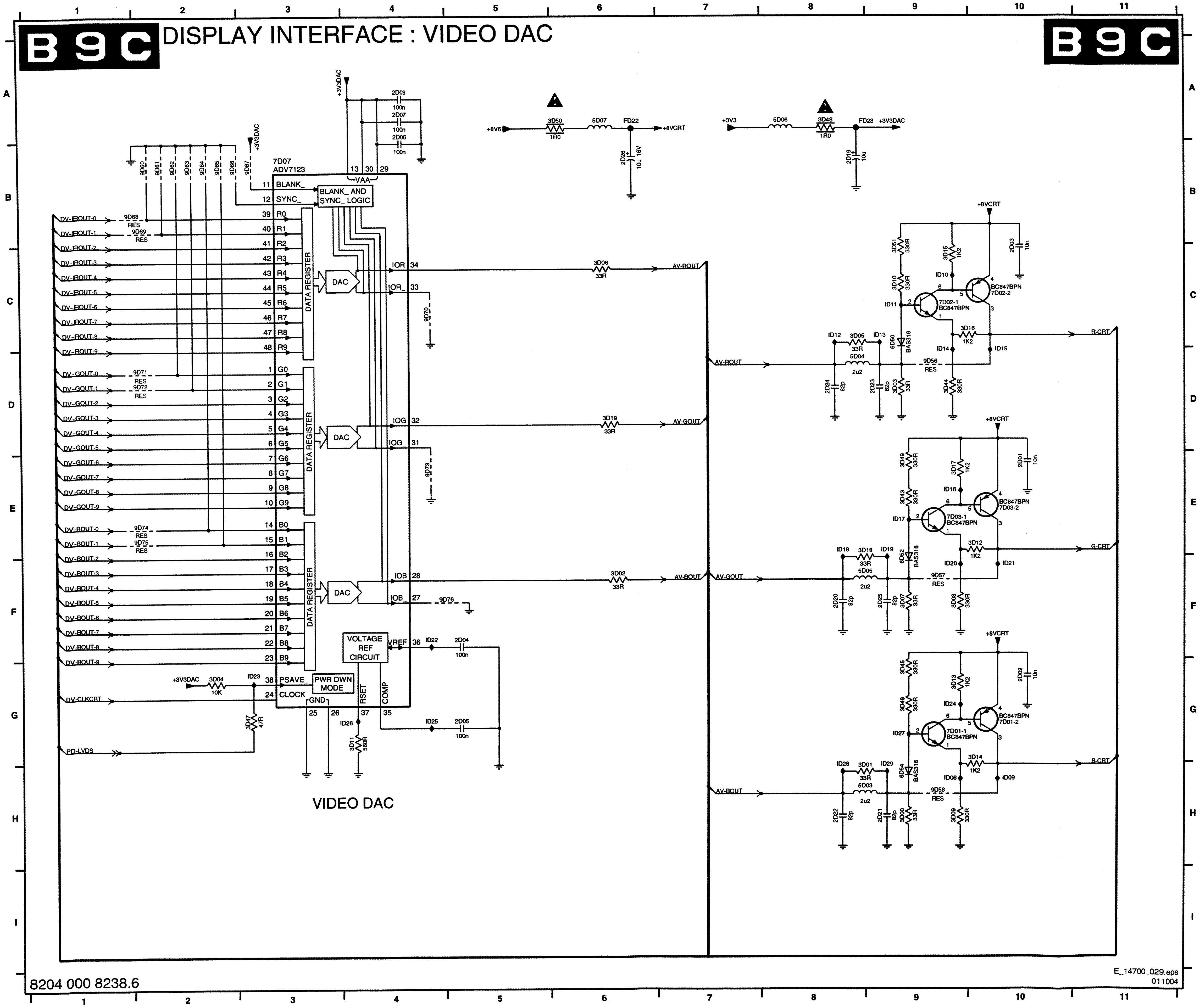
Small Signal Board: Display Interface: Bitswap (Optional)

2G35 B9
2G58 E3
2G59 D6
2G67 E5
2G69 E5
2G73 E6
3G38 C8
3G39 C8
3G53 E2
3G54 E4
3G55 E5
3G56 D6
6G07 E2
6G08 E4
7G09 E6
7G15 B8
9G07 E5
9G08 D5
9G09 E2
9G20 A2
9G21 A5
9G22 A2
9G23 A5
9G24 A2
9G25 A5
9G26 A2
9G27 A5
9G28 A2
9G29 A5
9G30 A2
9G31 A5
9G32 B2
9G33 A5
9G34 B2
9G35 B5
9G36 B2
9G37 B5
9G38 B2
9G39 B5
9G40 B2
9G41 B5
9G42 B2
9G43 B5
9G44 C2
9G45 B5
9G46 C2
9G47 B5
9G48 B8
9G49 C2
9G50 C8
9G51 C5
9G52 C8
9G53 C2
9G54 C5
9G55 C2
9G56 C5
9G57 C2
9G58 C5
9G59 C2
9G60 C5
9G61 D2
9G62 C5
9G63 D2
9G64 D5
9G65 D2
9G66 D5
9G67 D2
9G68 D5
9G69 D2
9G70 D5
9G71 D2
9G72 D2
9G73 D2
9G74 E2
9G75 E2
AG00 D3
FG67 C10
FG69 D3
FG70 D3
FG71 E3
FG72 E3


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
B9B
DISPLAY INTERFACE : BITSWAP
B9B
DV-ROUT-2 9G20 LV-ROUT-0
DV-ROUT-3 9G22 LV-ROUT-1
DV-ROUT-4 9G24 LV-ROUT-2
DV-ROUT-5 9G26 LV-ROUT-3
DV-ROUT-6 9G28 LV-ROUT-4
DV-ROUT-7 9G30 LV-ROUT-5
DV-ROUT-8 9G32 LV-ROUT-6
DV-ROUT-9 9G34 LV-ROUT-7
DV-GOUT-2 9G36 LV-GOUT-0
DV-GOUT-3 9G38 LV-GOUT-1
DV-GOUT-4 9G40 LV-GOUT-2
DV-GOUT-5 9G42 LV-GOUT-3
DV-GOUT-6 9G44 LV-GOUT-4
DV-GOUT-7 9G46 LV-GOUT-5
DV-GOUT-8 9G49 LV-GOUT-6
DV-GOUT-9 9G53 LV-GOUT-7
DV-BOUT-2 9G55 LV-BOUT-0
DV-BOUT-3 9G57 LV-BOUT-1
DV-BOUT-4 9G59 LV-BOUT-2
DV-BOUT-5 9G61 LV-BOUT-3
DV-BOUT-6 9G63 LV-BOUT-4
DV-BOUT-7 9G65 LV-BOUT-5
DV-BOUT-8 9G67 LV-BOUT-6
DV-BOUT-9 9G69 LV-BOUT-7
DV-CLKMOP 9G71 AG00 LV-CLKIN
DV-OUT-HS 9G72 FG69 LV-OUT-HS
DV-OUT-VS 9G73 FG70 LV-OUT-VS
DV-OUT-DE 9G74 FG71 LV-OUT-DE
DV-OUT-FFIELD 9G75 FG72 LV-OUT-FFIELD
IRQ-DOP_LCD-PWR-ON
6G07 RES
BAS316
3G53
10K
2G58 RES
100n
LCD-PWR-ON
FAN-COUNTER_LCD-PWR-ON 9G09
DV-ROUT-4 9G21 LV-ROUT-0
DV-ROUT-5 9G23 LV-ROUT-1
DV-ROUT-6 9G25 LV-ROUT-2
DV-ROUT-7 9G27 LV-ROUT-3
DV-ROUT-8 9G29 LV-ROUT-4
DV-ROUT-9 9G31 LV-ROUT-5
DV-ROUT-2 9G33 LV-ROUT-6
DV-ROUT-3 9G35 LV-ROUT-7
DV-GOUT-4 9G37 LV-GOUT-0
DV-GOUT-5 9G39 LV-GOUT-1
DV-GOUT-6 9G41 LV-GOUT-2
DV-GOUT-7 9G43 LV-GOUT-3
DV-GOUT-8 9G45 LV-GOUT-4
DV-GOUT-9 9G47 LV-GOUT-5
DV-GOUT-2 9G51 LV-GOUT-6
DV-GOUT-3 9G54 LV-GOUT-7
DV-BOUT-4 9G56 LV-BOUT-0
DV-BOUT-5 9G58 LV-BOUT-1
DV-BOUT-6 9G60 LV-BOUT-2
DV-BOUT-7 9G62 LV-BOUT-3
DV-BOUT-8 9G64 LV-BOUT-4
DV-BOUT-9 9G66 LV-BOUT-5
DV-BOUT-2 9G68 LV-BOUT-6
DV-BOUT-3 9G70 LV-BOUT-7
+3V3-EPLD
DOOR-SWITCH_PD-LVDS 9G08
PD-LVDS-VIPER 9G07
3G56 10K
2G59 1n0
6G08
BAS316
3G54
IRQ-DOP_LCD-PWR-ON 10K
3G55 10K
2G67 1u0
2G69 1u0
7G09 BC847BW
2G73 1u0 RES
PD-LVDS
RESERVED
+3V3-EPLD
2G35 100n
+3V3-EPLD
7G15 PCA9554PW
16
VDD
9G48 1 A0
9G50 2 A1
9G52 3 A2
IO
0 4 PD-LVDS
1 5 LCD-PWR-ON
2 6 CTRL-3
3 7 CTRL-2
4 9 CTRL-1
5 10 POWER-OK
6 11
7 12
FG67
SCL-DMA-BUS1 3G38 47R 14 SCL
SDA-DMA-BUS1 3G39 47R 15 SDA
INT 13
VSS 8
I2C
I/O EXPANDER

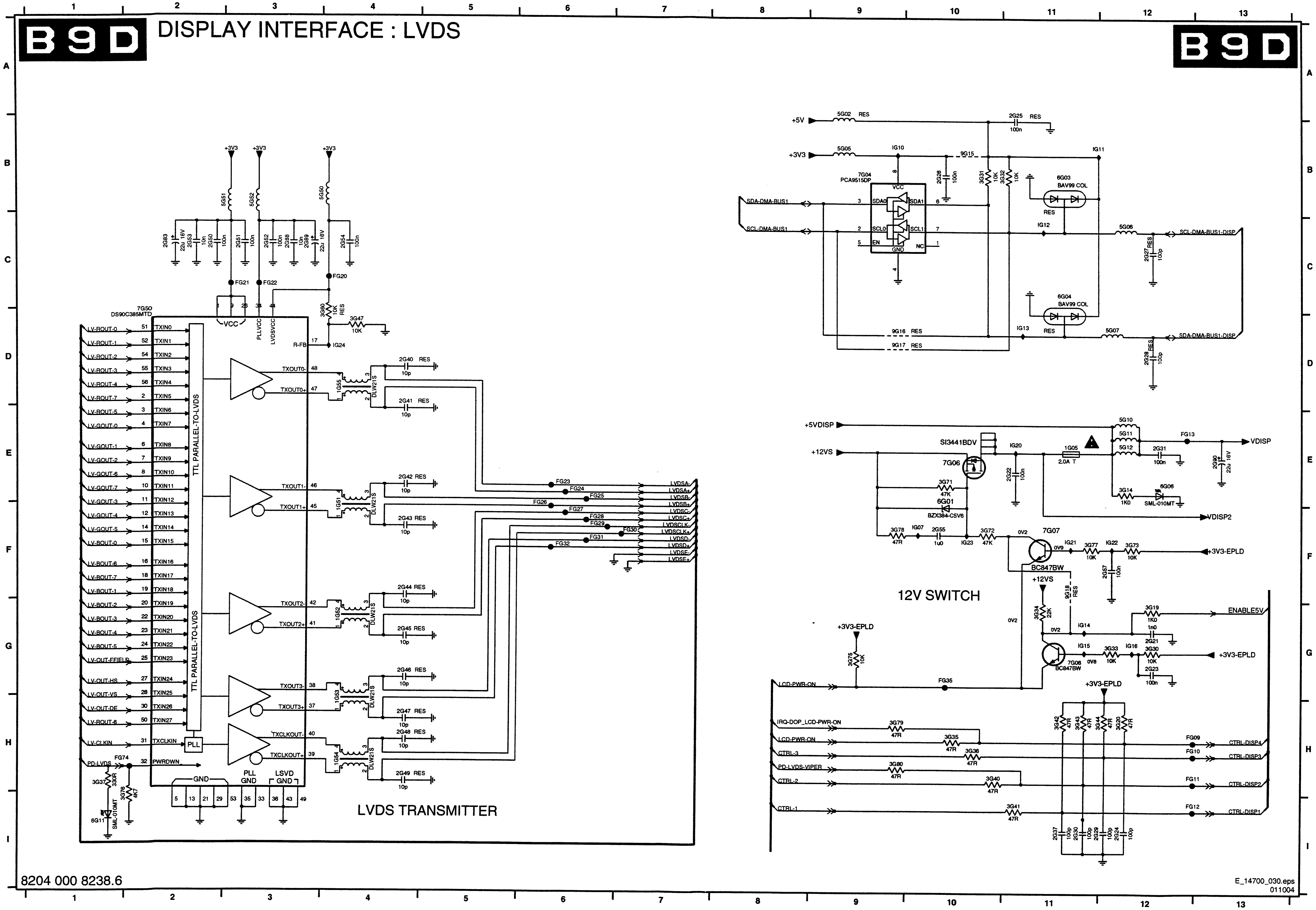
E_14700_028.eps
011004

Small Signal Board: Display Interface: Video DAC


B9C
DISPLAY INTERFACE : VIDEO DAC
7D07
ADV7123
BLANK_ AND SYNC_ LOGIC
DATA REGISTER
DAC
VOLTAGE REF CIRCUIT
PWR DWN MODE
VIDEO DAC
+3V3DAC
+8V6
3D50 1R0
5D07
FD22
+8VCRT
+3V3
5D06
3D48 1R0
FD23
2D26 10u 16V
2D19 10u
AV-ROUT
AV-GOUT
AV-BOUT
R-CRT
G-CRT
B-CRT
BC847BPN
BAS316
DV-ROUT-0 … DV-ROUT-9
DV-GOUT-0 … DV-GOUT-9
DV-BOUT-0 … DV-BOUT-9
DV-CLKCRT
PD-LVDS
IOR
IOR_
IOG
IOG_
IOB
IOB_
VREF
PSAVE_
CLOCK
GND
RSET
COMP
VAA
8204 000 8238.6
E_14700_029.eps
011004

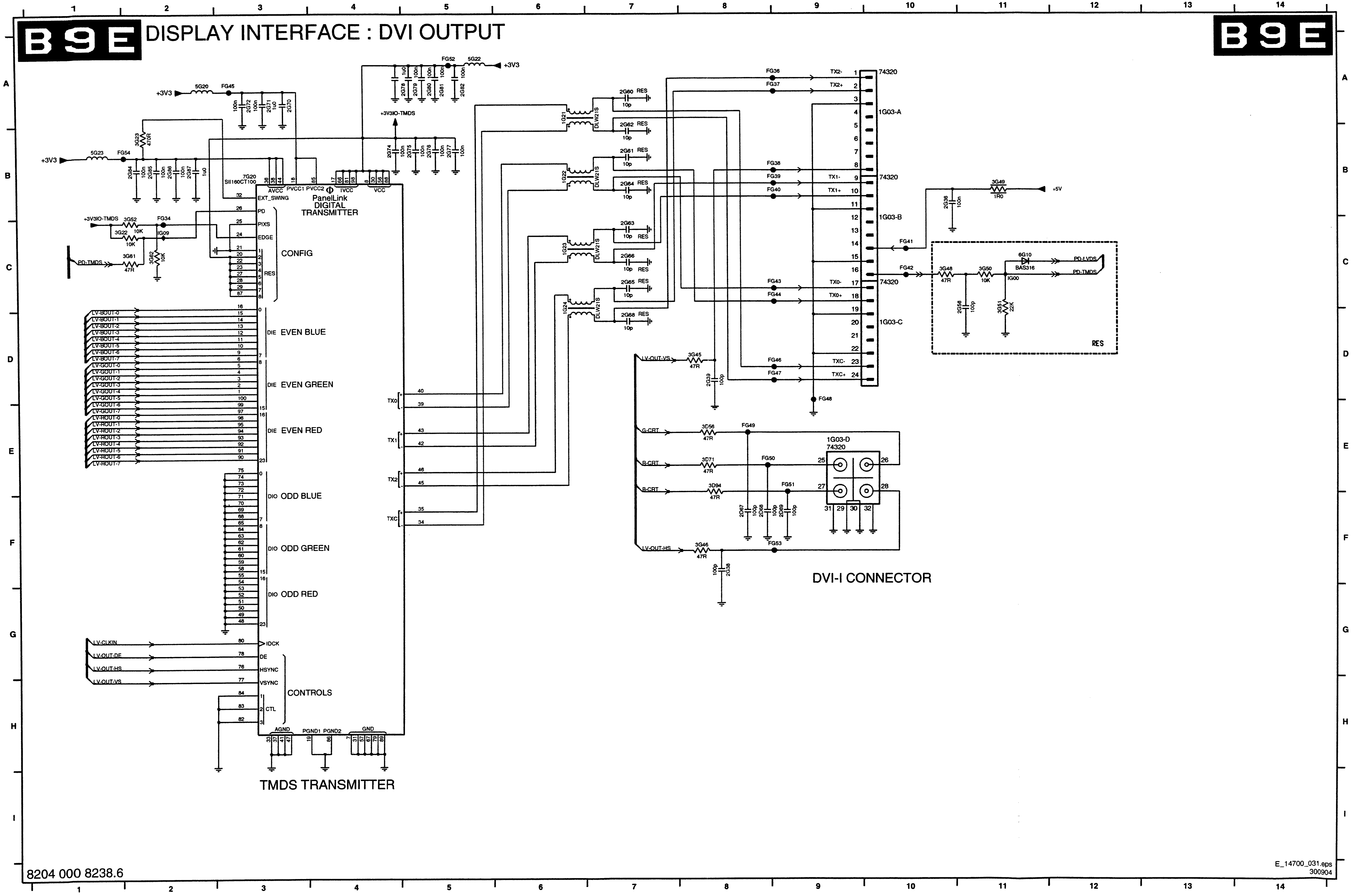
2D01	E10
2D02	G10
2D03	C10
2D04	F5
2D05	G5
2D06	A4
2D07	A4
2D08	A4
2D19	B8
2D20	F8
2D21	H9
2D22	H8
2D23	D9
2D24	D8
2D25	F9
2D26	B6
3D00	H9
3D01	H8
3D02	F6
3D03	D9
3D04	G2
3D05	C8
3D06	C6
3D07	F9
3D08	F9
3D09	H9
3D10	C9
3D11	G4
3D12	E10
3D13	G9
3D14	G10
3D15	C9
3D16	C9
3D17	E9
3D18	E8
3D19	D6
3D43	E9
3D44	D9
3D45	G9
3D46	G9
3D47	G3
3D48	A8
3D49	E9
3D50	A6
3D51	C9
5D03	H8
5D04	D8
5D05	F8
5D06	A8
5D07	A6
6D50	C9
6D52	F9
6D54	H9
7D01-1	G9
7D01-2	G10
7D02-1	C9
7D02-2	C10
7D03-1	E9
7D03-2	E10
7D07	B3
9D56	D9
9D57	F9
9D58	H9
9D60	B2
9D61	B2
9D62	B2
9D63	B2
9D64	B2
9D65	B2
9D66	B2
9D67	B3
9D68	B1
9D69	B2
9D70	C4
9D71	D2
9D72	D2
9D73	E4
9D74	E2
9D75	E2
9D76	F4
FD22	A6
FD23	A9
ID08	H9
ID09	H10
ID10	C9
ID11	C9
ID12	C8
ID13	C9
ID14	D9
ID15	D10
ID16	E9
ID17	E9
ID18	E8
ID19	E9
ID20	F9
ID21	F10
ID22	F4
ID23	G3
ID24	G9
ID25	G4
ID26	G4
ID27	G9
ID28	H8
ID29	H9

Small Signal Board: Display Interface: LVDS


B9D
DISPLAY INTERFACE : LVDS
B9D
DS90C385MTD
7G50
TTL PARALLEL-TO-LVDS
PLL
LVDS TRANSMITTER
+3V3
VCC
PLLVCC
LVDSVCC
GND
PLL GND
LSVD GND
LV-ROUT-0
LV-ROUT-1
LV-ROUT-2
LV-ROUT-3
LV-ROUT-4
LV-ROUT-7
LV-ROUT-5
LV-GOUT-0
LV-GOUT-1
LV-GOUT-2
LV-GOUT-6
LV-GOUT-7
LV-GOUT-3
LV-GOUT-4
LV-GOUT-5
LV-BOUT-0
LV-BOUT-6
LV-BOUT-7
LV-BOUT-1
LV-BOUT-2
LV-BOUT-3
LV-BOUT-4
LV-BOUT-5
LV-OUT-FFIELD
LV-OUT-HS
LV-OUT-VS
LV-OUT-DE
LV-ROUT-6
LV-CLKIN
PD-LVDS
TXOUT0-
TXOUT0+
TXOUT1-
TXOUT1+
TXOUT2-
TXOUT2+
TXOUT3-
TXOUT3+
TXCLKOUT-
TXCLKOUT+
LVDSA-
LVDSA+
LVDSB-
LVDSB+
LVDSC-
LVDSC+
LVDSCLK-
LVDSCLK+
LVDSD-
LVDSD+
LVDSE-
LVDSE+
+5V
+3V3
PCA9515DP
7G04
SDA-DMA-BUS1
SCL-DMA-BUS1
SCL-DMA-BUS1-DISP
SDA-DMA-BUS1-DISP
BAV99 COL
6G03
6G04
+5VDISP
+12VS
SI3441BDV
7G06
BZX384-C5V6
VDISP
VDISP2
7G07
BC847BW
7G08
+3V3-EPLD
12V SWITCH
ENABLE5V
LCD-PWR-ON
IRQ-DOP_LCD-PWR-ON
CTRL-3
PD-LVDS-VIPER
CTRL-2
CTRL-1
CTRL-DISP4
CTRL-DISP3
CTRL-DISP2
CTRL-DISP1
8204 000 8238.6
E_14700_030.eps
011004

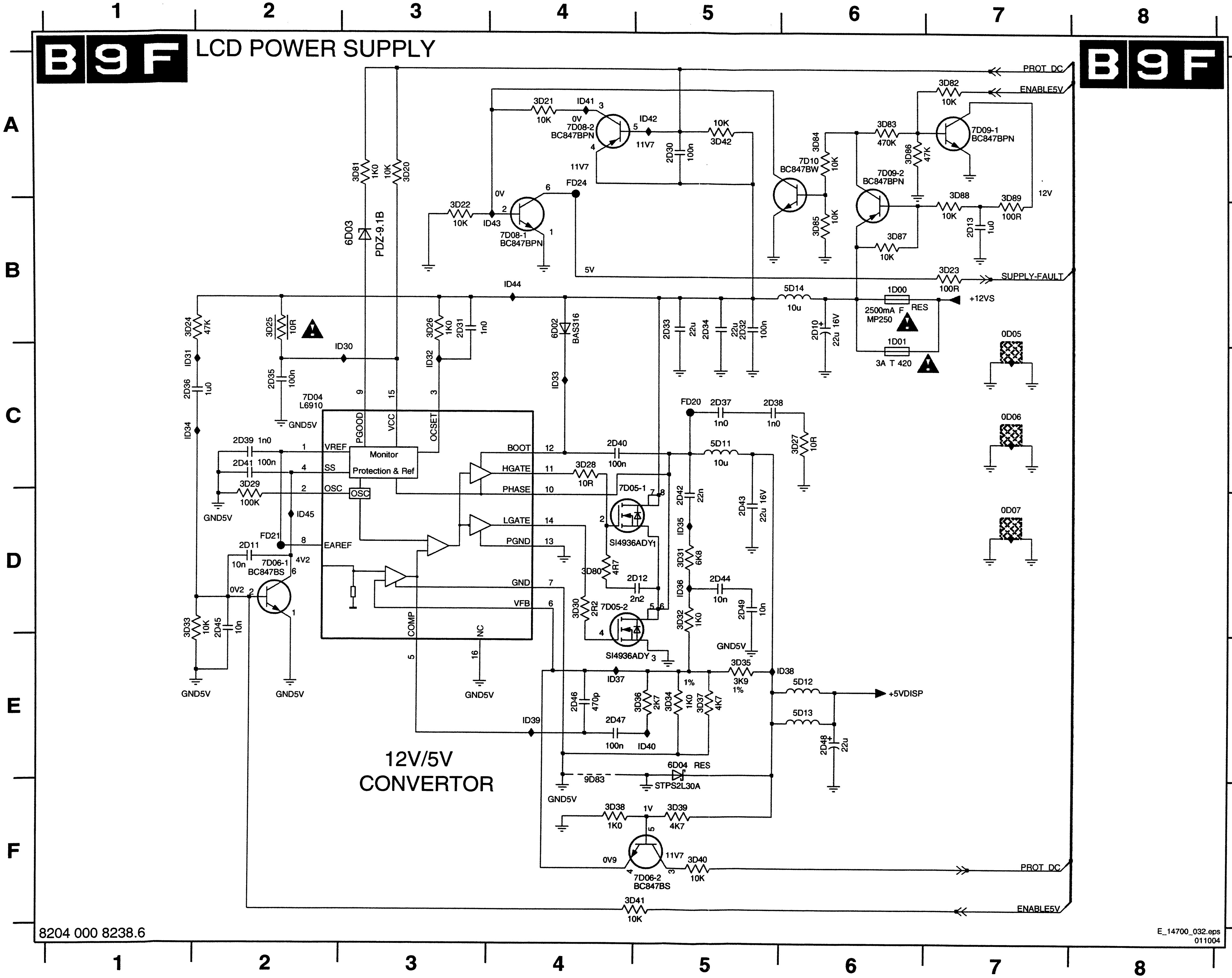
1G05	E11
1G51	F4
1G52	G4
1G53	H4
1G54	H4
1G55	D4
2G21	G12
2G22	E11
2G23	G12
2G24	I12
2G25	A11
2G26	B10
2G27	C12
2G28	D12
2G29	I12
2G30	I11
2G31	E12
2G37	I11
2G40	D4
2G41	D4
2G42	E4
2G43	F4
2G44	F4
2G45	G4
2G46	G4
2G47	H4
2G48	H4
2G49	H4
2G50	C2
2G51	C3
2G52	C3
2G53	C2
2G54	C4
2G55	F10
2G57	F12
2G83	C2
2G88	C3
2G89	C3
2G90	E13
3G14	E12
3G19	G12
3G20	H12
3G30	G12
3G31	B10
3G32	B11
3G33	G12
3G34	G11
3G35	H10
3G36	H10
3G37	H1
3G40	H10
3G41	I11
3G42	H11
3G43	H11
3G44	H12
3G47	D4
3G60	D4
3G71	E10
3G72	F10
3G73	F12
3G75	G9
3G76	I2
3G77	F11
3G78	F9
3G79	H9
3G80	H9
5G02	A9
5G05	B9
5G06	C12
5G07	D12
5G10	E12
5G11	E12
5G12	E12
5G50	B3
5G51	B2
5G52	B3
6G01	E10
6G03	B11
6G04	C11
6G06	E12
6G11	I1
7G04	B9
7G06	E10
7G07	F11
7G08	G11
7G50	D2
9G15	B10
9G16	D9
9G17	D9
9G18	F11
FG09	H12
FG10	H12
FG11	H12
FG12	I12
FG13	E12
FG20	C4
FG21	C3
FG22	C3
FG23	E6
FG24	E6
FG25	E6
FG26	F6
FG27	F6
FG28	F6
FG29	F6
FG30	F7
FG31	F6
FG32	F6
FG35	G10
FG74	H1
IG07	F10
IG10	B9
IG11	B11
IG12	C11
IG13	D11
IG14	G11
IG15	G11
IG16	G12
IG20	E11
IG21	F11
IG22	F12
IG23	F10
IG24	D4

Small Signal Board: Display Interface: DVI Output (Optional)


B9E
DISPLAY INTERFACE : DVI OUTPUT
B9E
7G20
SII160CT100
PanelLink
DIGITAL
TRANSMITTER
CONFIG
EVEN BLUE
EVEN GREEN
EVEN RED
ODD BLUE
ODD GREEN
ODD RED
CONTROLS
TMDS TRANSMITTER
+3V3
+3V3IO-TMDS
PD-TMDS
LV-CLKIN
LV-OUT-DE
LV-OUT-HS
LV-OUT-VS
TX0
TX1
TX2
TXC
DLW21S
74320
1G03-A
1G03-B
1G03-C
1G03-D
TX2-
TX2+
TX1-
TX1+
TX0-
TX0+
TXC-
TXC+
+5V
6G10
BAS316
PD-LVDS
PD-TMDS
RES
G-CRT
R-CRT
B-CRT
DVI-I CONNECTOR
8204 000 8238.6
E_14700_031.eps
300904

1G03-A	A10
1G03-B	C10
1G03-C	D10
1G03-D	E9
1G21	A6
1G22	B6
1G23	C6
1G24	C6
2D67	F8
2D68	F8
2D69	F9
2G36	B10
2G38	F8
2G39	D8
2G56	C11
2G60	A7
2G61	B7
2G62	B7
2G63	C7
2G64	B7
2G65	C7
2G66	C7
2G68	D7
2G70	A3
2G71	A3
2G72	A3
2G74	B4
2G75	B5
2G76	B5
2G77	B5
2G78	A5
2G79	A5
2G80	A5
2G81	A5
2G82	A5
2G84	B2
2G85	B2
2G86	B2
2G87	B2
3D56	E8
3D71	E8
3D94	E8
3G22	C1
3G23	B2
3G45	D8
3G46	F8
3G48	C10
3G49	B11
3G50	C11
3G51	C11
3G52	C2
3G61	C2
3G62	C2
5G20	A2
5G22	A5
5G23	B1
6G10	C11
7G20	B3
FG34	C2
FG36	A9
FG37	A9
FG38	B9
FG39	B9
FG40	B9
FG41	C10
FG42	C10
FG43	C9
FG44	C9
FG45	A3
FG46	D9
FG47	D9
FG48	E9
FG49	E8
FG50	E8
FG51	E9
FG52	A5
FG53	F9
FG54	B2
IG00	C11
IG09	C2

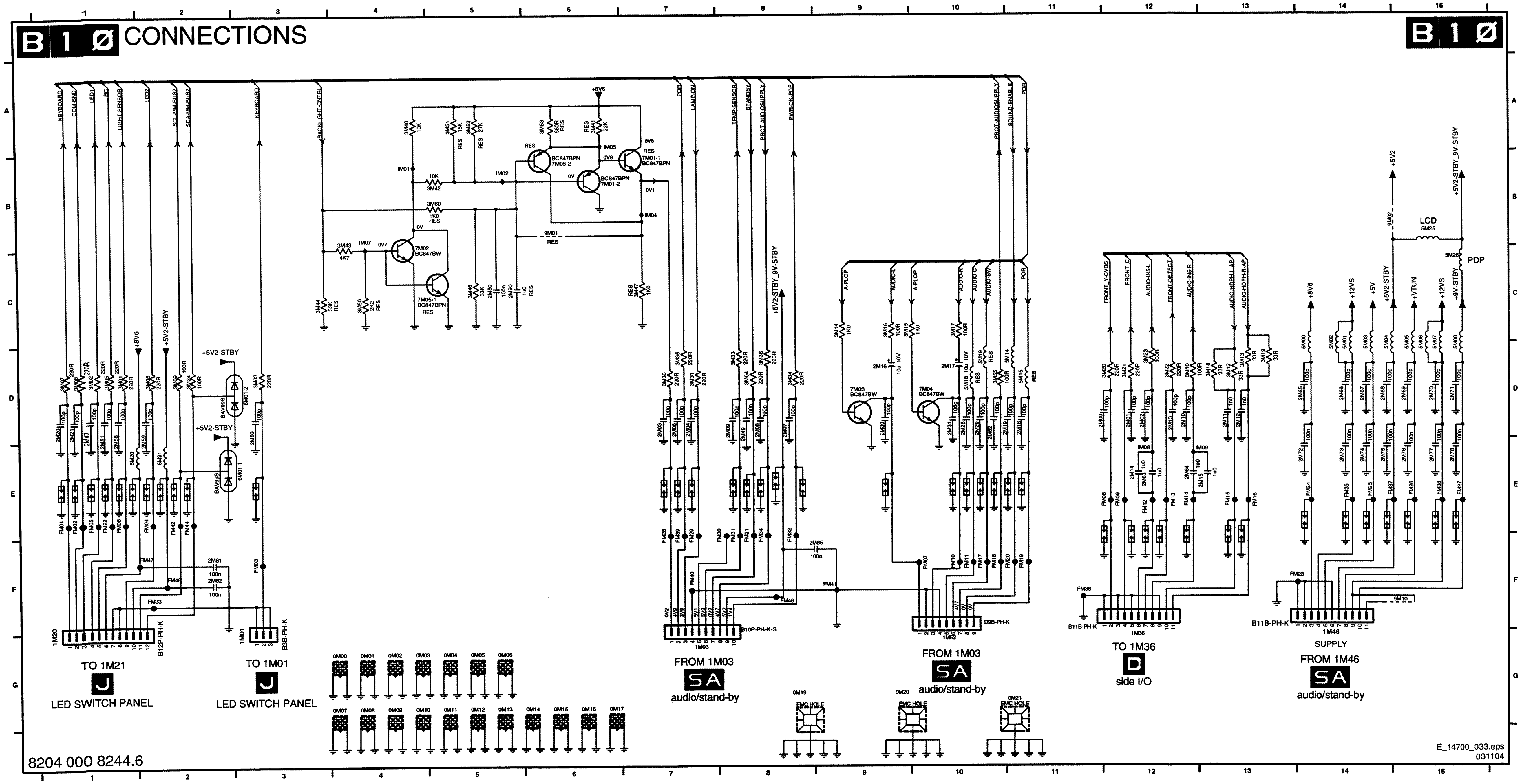
Small Signal Board: LCD Power Supply


B9F
LCD POWER SUPPLY
12V/5V
CONVERTOR
PROT_DC
ENABLE5V
SUPPLY-FAULT
+12VS
+5VDISP
7D04
L6910
Monitor
Protection & Ref
OSC
VREF
SS
EAREF
PGOOD
VCC
OCSET
BOOT
HGATE
PHASE
LGATE
PGND
GND
VFB
COMP
NC
7D05-1
7D05-2
SI4936ADY
7D06-1
BC847BS
7D06-2
7D08-1
7D08-2
BC847BPN
7D09-1
7D09-2
7D10
BC847BW
6D02
BAS316
6D03
PDZ-9.1B
6D04
STPS2L30A
1D00
2500mA F
MP250
1D01
3A T 420
RES
5D11
5D12
5D13
5D14
GND5V
0D05
0D06
0D07
9D83
8204 000 8238.6
E_14700_032.eps
011004

0D05	B7
0D06	C7
0D07	D7
1D00	B6
1D01	B6
2D10	B6
2D11	D2
2D12	D5
2D13	B7
2D30	A5
2D31	B3
2D32	B5
2D33	B5
2D34	B5
2D35	C2
2D36	C1
2D37	C5
2D38	C5
2D39	C2
2D40	C4
2D41	C2
2D42	D5
2D43	D5
2D44	D5
2D45	D2
2D46	E4
2D47	E4
2D48	E6
2D49	D5
3D20	A3
3D21	A4
3D22	B3
3D23	B7
3D24	B1
3D25	B2
3D26	B3
3D27	C6
3D28	C4
3D29	C2
3D30	D4
3D31	D5
3D32	D5
3D33	D1
3D34	E5
3D35	E5
3D36	E5
3D37	E5
3D38	F4
3D39	F5
3D40	F5
3D41	F5
3D42	A5
3D80	D4
3D81	A3
3D82	A7
3D83	A6
3D84	A6
3D85	B6
3D86	A6
3D87	B6
3D88	A7
3D89	A7
5D11	C5
5D12	E6
5D13	E6
5D14	B6
6D02	B4
6D03	B3
6D04	E5
7D04	C2
7D05-1	D4
7D05-2	D4
7D06-1	D2
7D06-2	F5
7D08-1	B4
7D08-2	A4
7D09-1	A7
7D09-2	A6
7D10	A6
9D83	E4
FD20	C5
FD21	D2
FD24	A4
ID30	C3
ID31	C1
ID32	C3
ID33	C4
ID34	C1
ID35	D5
ID36	D5
ID37	E4
ID38	E6
ID39	E4
ID40	E5
ID41	A4
ID42	A5
ID43	B4
ID44	B4
ID45	D2

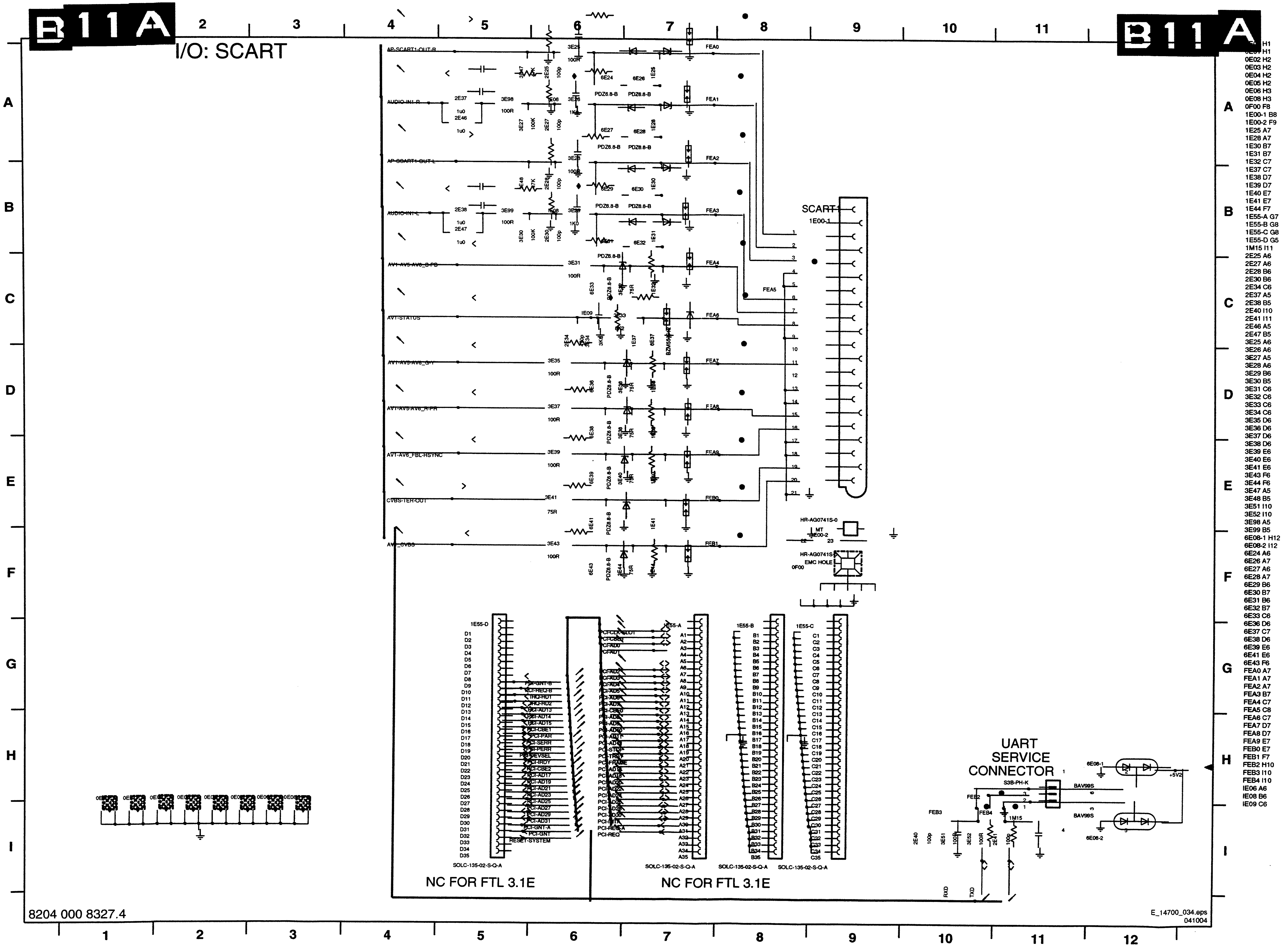
Small Signal Board: Connections

0M00	G4
0M01	G4
0M02	G4
0M03	G4
0M04	G5
0M05	G5
0M06	G5
0M07	G4
0M08	G4
0M09	G4
0M10	G4
0M11	G5
0M12	G5
0M13	G5
0M14	G6
0M15	G6
0M16	G6
0M17	G6
0M19	G8
0M20	G9
0M21	G11
1M01	F3
1M03	G7
1M20	G1
1M36	G12
1M46	G14
1M52	G10
2M00	D11
2M01	D12
2M02	D12
2M03	D7
2M04	D7
2M06	D7
2M07	D8
2M08	D8
2M09	D8
2M10	D12
2M11	D13
2M12	D13
2M13	D12
2M14	E12
2M15	E13
2M16	D9
2M17	D10
2M18	D11
2M19	D10
2M20	D1
2M21	D1
2M28	D10
2M29	D10
2M30	D9
2M31	D10
2M47	D1
2M49	D8
2M50	D3
2M51	D1
2M58	D1
2M59	D2
2M62	D10
2M63	E12
2M64	E12
2M65	D14
2M66	D14
2M67	D14
2M68	D14
2M69	D15
2M70	D15
2M71	D15
2M72	E14
2M73	E14
2M74	E14
2M75	E14
2M76	E15
2M77	E15
2M78	E15
2M80	C5
2M81	F2
2M82	F2
2M85	F9
2M90	C5
3M01	D1
3M02	D1
3M03	D3
3M04	D8
3M05	D1
3M06	D2
3M07	D1
3M08	D1
3M09	D2
3M10	D12
3M12	D13
3M13	D13
3M14	C9
3M15	C9
3M16	C9
3M17	C10
3M18	D13
3M19	D13
3M20	D12
3M21	D12
3M22	D12
3M23	D12
3M24	D2
3M30	D7
3M31	D7
3M33	D8
3M34	D8
3M35	D7
3M36	D8
3M40	A4
3M41	A6
3M42	B5
3M43	B4
3M44	C3
3M46	C5
3M47	C7
3M50	C4
3M51	A5
3M52	A5
3M53	A6
3M55	D10
3M60	B5
5M00	D14
5M01	D14
5M02	D14
5M03	D14
5M04	D14
5M05	D15
5M06	D15
5M07	D15
5M08	D15
5M14	D11
5M15	D11
5M18	D10
5M19	D10
5M20	E1
5M21	E2
5M25	B15
5M26	C15
6M01-1	E3
6M01-2	D3
7M01-1	B7
7M01-2	B6
7M02	C4
7M03	D9
7M04	D10
7M05-1	C4
7M05-2	B6
9M01	B6
9M02	B14
9M10	F15
FM01	E1
FM02	E1
FM03	F3
FM04	E2
FM05	E1
FM06	E1
FM07	F10
FM08	E12
FM09	E12
FM10	F10
FM11	F10
FM12	E12
FM13	E12
FM14	E12
FM15	E13
FM16	E13
FM17	F10
FM18	F10
FM19	F11
FM20	F11
FM21	F8
FM22	E1
FM23	F13
FM24	E14
FM25	E14
FM26	E15
FM27	E15
FM28	F7
FM29	F7
FM30	F8
FM31	F8
FM32	F8
FM33	F2
FM34	F8
FM35	E14
FM36	F11
FM37	E14
FM38	E15
FM39	F7
FM40	F7
FM41	F9
FM42	E2
FM44	E2
FM46	F8
FM47	F2
FM48	F2
IM01	B4
IM02	B5
IM04	B7
IM05	A6
IM07	B4
IM08	E12
IM09	E13

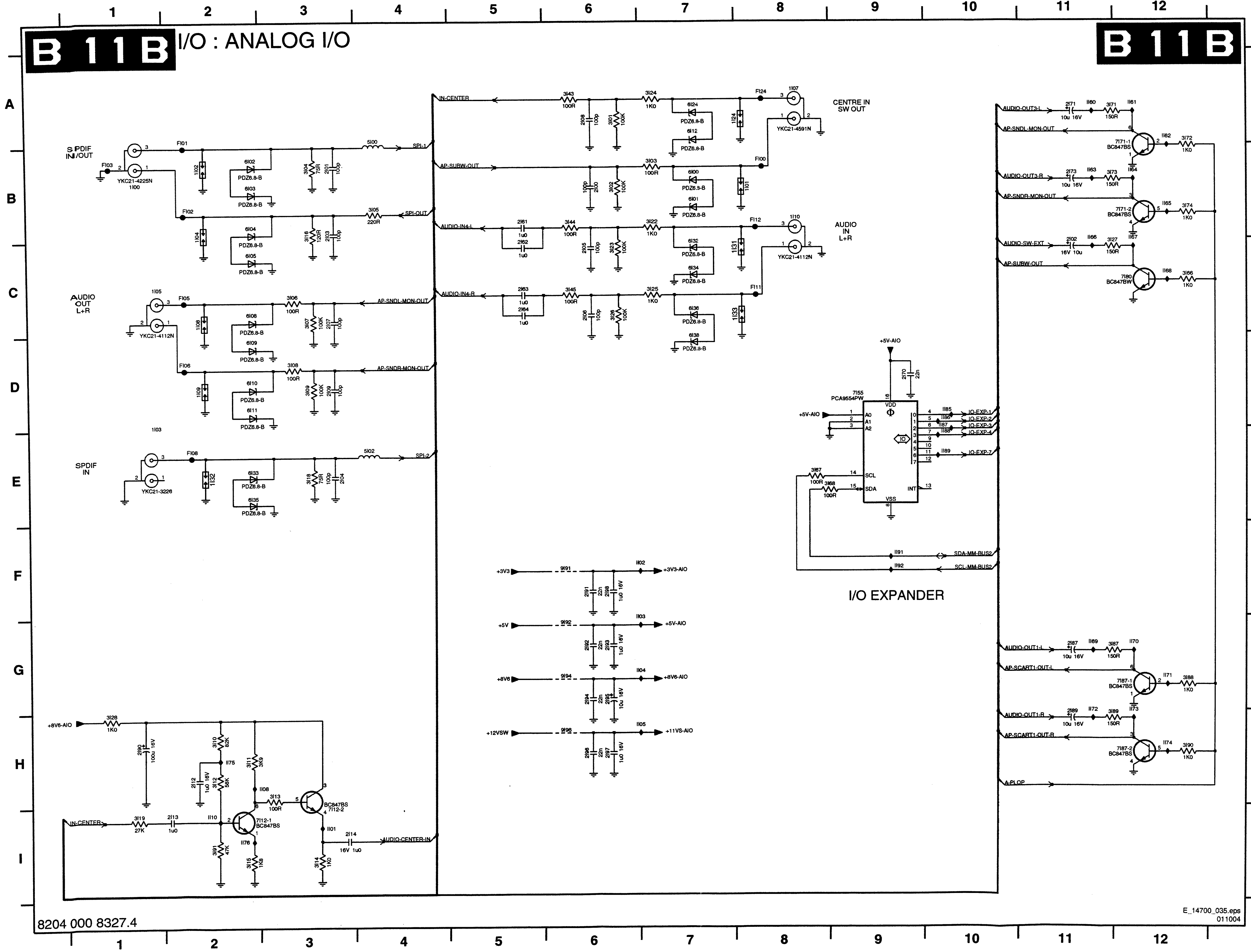


B10 CONNECTIONS
B10
KEYBOARD
COM-SND
LED1
BC
LIGHT-SENSOR
LED2
SCL-MAIN-BUS2
SDA-MAIN-BUS2
KEYBOARD
BACKLIGHT-CNTRL
+8V6
+5V2-STBY
BAV99S
POR
LAMP-ON
TEMP-SENSOR
STANDBY
PROT-AUDIOSUPPLY
PWR-OK-PDP
+5V2-STBY_9V-STBY
PROT-AUDIOSUPPLY
SOUND-ENABLE
POR
A-PLOP
AUDIO-L
A-PLOP
AUDIO-R
AUDIO-C
AUDIO-SW
POR
7M03 BC847BW
7M04 BC847BW
7M02 BC847BW
7M05-1 BC847BPN
7M05-2 BC847BPN
7M01-1 BC847BPN
7M01-2 BC847BPN
FRONT_Y-CVBS
FRONT_C
AUDIO-IN5-L
FRONT-DETECT
AUDIO-IN5-R
AUDIO-HDPH-L-AP
AUDIO-HDPH-R-AP
+5V2
+5V2-STBY_9V-STBY
LCD
5M25
5M26
PDP
+8V6
+12VS
+5V
+5V2-STBY
+VTUN
+12VS
+9V-STBY
1M20
B12P-PH-K
TO 1M21
J
LED SWITCH PANEL
1M01
B3B-PH-K
TO 1M01
J
LED SWITCH PANEL
B10P-PH-K-S
1M03
FROM 1M03
SA
audio/stand-by
B9B-PH-K
1M52
FROM 1M03
SA
audio/stand-by
B11B-PH-K
1M36
TO 1M36
D
side I/O
B11B-PH-K
1M46
SUPPLY
FROM 1M46
SA
audio/stand-by
EMC HOLE
8204 000 8244.6
E_14700_033.eps
031104

Small Signal Board: I/O: SCART

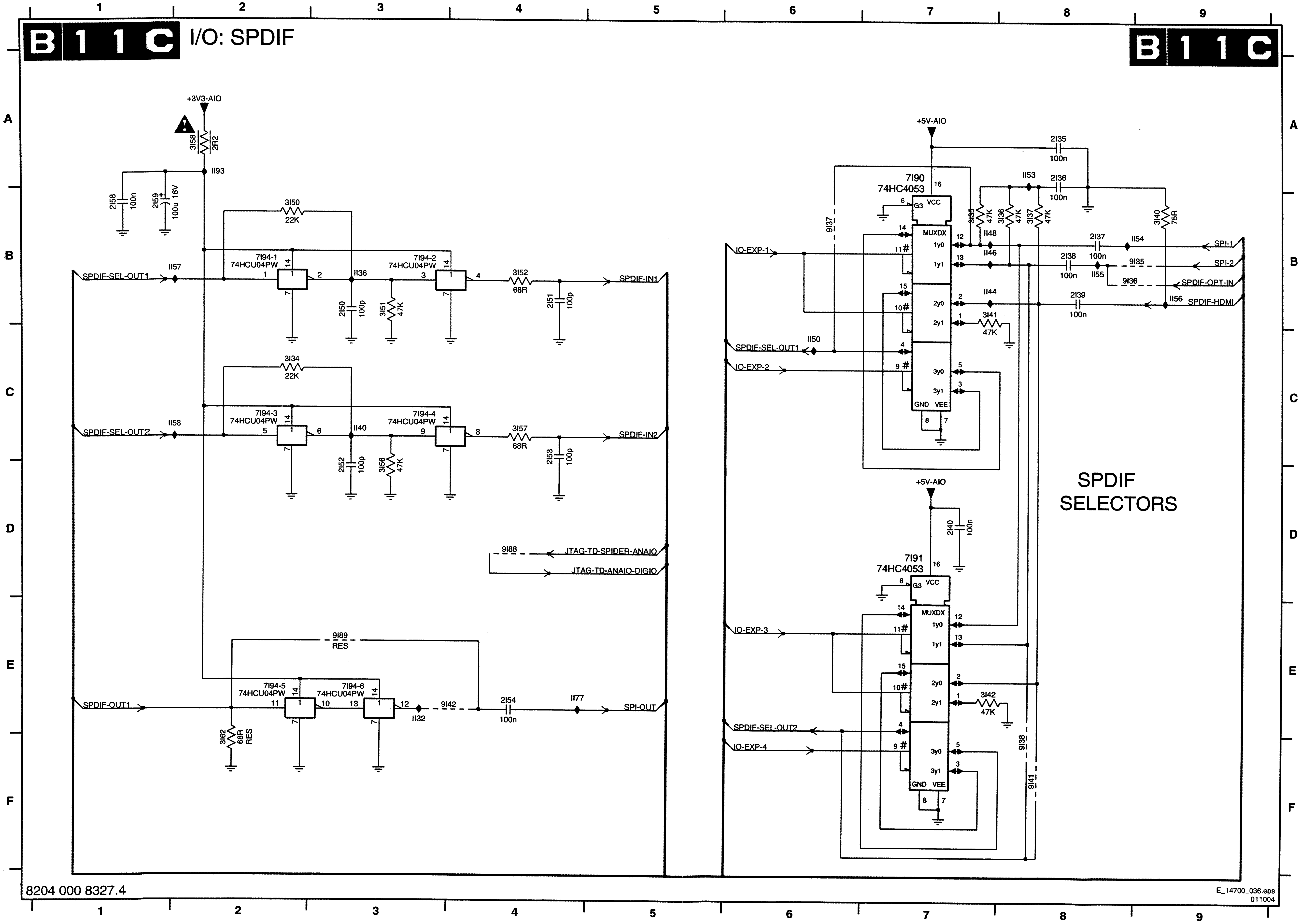

B11A
I/O: SCART
AP-SCART1-OUT-R
AUDIO-IN1-R
AP-SCART1-OUT-L
AUDIO-IN1-L
AV1-AV5-AV6_B-PB
AV1-STATUS
AV1-AV5-AV6_G-Y
AV1-AV5-AV6_R-PR
AV1-AV6_FBL-HSYNC
CVBS-TER-OUT
AV1_CVBS
PDZ6.8-B
BZM55B-8
FEA0
FEA1
FEA2
FEA3
FEA4
FEA5
FEA6
FEA7
FEA8
FEA9
FEB0
FEB1
SCART1
1E00-1
HR-AG0741S-0
1E00-2
HR-AG0741S
EMC HOLE
0F00
1E55-D
1E55-A
1E55-B
1E55-C
SOLC-135-02-S-Q-A
NC FOR FTL 3.1E
NC FOR FTL 3.1E
RESET-SYSTEM
UART SERVICE CONNECTOR
S3B-PH-K
BAV99S
6E08-1
6E08-2
1M15
FEB2
FEB3
FEB4
+5V2
RXD
TXD
8204 000 8327.4
E_14700_034.eps
041004
H1
H1
0E02 H2
0E03 H2
0E04 H2
0E05 H2
0E06 H3
0E08 H3
0F00 F8
1E00-1 B8
1E00-2 F9
1E25 A7
1E28 A7
1E30 B7
1E31 B7
1E32 C7
1E37 C7
1E38 D7
1E39 D7
1E40 E7
1E41 E7
1E44 F7
1E55-A G7
1E55-B G8
1E55-C G8
1E55-D G5
1M15 I11
2E25 A6
2E27 A6
2E28 B6
2E30 B6
2E34 C6
2E37 A5
2E38 B5
2E40 I10
2E41 I11
2E46 A5
2E47 B5
3E25 A6
3E26 A6
3E27 A5
3E28 A6
3E29 B6
3E30 B5
3E31 C6
3E32 C6
3E33 C6
3E34 C6
3E35 D6
3E36 D6
3E37 D6
3E38 D6
3E39 E6
3E40 E6
3E41 E6
3E43 F6
3E44 F6
3E47 A5
3E48 B5
3E51 I10
3E52 I10
3E98 A5
3E99 B5
6E08-1 H12
6E08-2 I12
6E24 A6
6E26 A7
6E27 A6
6E28 A7
6E29 B6
6E30 B7
6E31 B6
6E32 B7
6E33 C6
6E36 D6
6E37 C7
6E38 D6
6E39 E6
6E41 E6
6E43 F6
FEA0 A7
FEA1 A7
FEA2 A7
FEA3 B7
FEA4 C7
FEA5 C8
FEA6 C7
FEA7 D7
FEA8 D7
FEA9 E7
FEB0 E7
FEB1 F7
FEB2 H10
FEB3 I10
FEB4 I10
IE06 A6
IE08 B6
IE09 C6

Small Signal Board: I/O: Analog I/O


B 11 B
I/O : ANALOG I/O
B 11 B
1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
SPDIF IN/OUT
YKC21-4225N
1100
F101
F102
F103
1102
1104
6102
6103
6104
6105
PDZ6.8-B
3104 75R
2101 100p
3116 120R
2103 100p
5100
SPI-1
3105 220R
SPI-OUT
AUDIO OUT L+R
1105
F105
F106
1108
1109
YKC21-4112N
6108
6109
6110
6111
3106 100R
3107 100K
2107 100p
3108 100R
3109 100K
2109 100p
AP-SNDL-MON-OUT
AP-SNDR-MON-OUT
1103
SPDIF IN
F108
1132
YKC21-3226
6133
6135
3118 75R
2104 100p
5102
SPI-2
IN-CENTER
3143 100R
3124 1K0
F124
1107
CENTRE IN SW OUT
YKC21-4591N
2108 100p
3101 100K
6124
6112
1124
AP-SUBW-OUT
3103 100R
F100
2100 100p
3102 100K
6100
6101
1101
AUDIO-IN4-L
2161 1u0
2162 1u0
3144 100R
3122 1K0
F112
1110
AUDIO IN L+R
YKC21-4112N
2105 100p
3123 100K
6132
6134
1131
AUDIO-IN4-R
2163 1u0
2164 1u0
3145 100R
3125 1K0
F111
2106 100p
3126 100K
6136
6138
1133
+5V-AIO
2170 22n
7155 PCA9554PW
VDD
A0
A1
A2
SCL
SDA
INT
VSS
IO
3167 100R
3168 100R
1185
1186
1187
1188
1189
IO-EXP-1
IO-EXP-2
IO-EXP-3
IO-EXP-4
IO-EXP-7
1191
1192
SDA-MM-BUS2
SCL-MM-BUS2
I/O EXPANDER
+3V3
9191
1102
+3V3-AIO
2191 22n
2198 1u0 16V
+5V
9192
1103
+5V-AIO
2192 22n
2193 1u0 16V
+8V6
9194
1104
+8V6-AIO
2194 22n
2195 10u 16V
+12VSW
9196
1105
+11VS-AIO
2196 22n
2197 1u0 16V
AUDIO-OUT3-L
2171 10u 16V
1160
3171 150R
1161
AP-SNDL-MON-OUT
7171-1 BC847BS
1162
3172 1K0
1164
AUDIO-OUT3-R
2173 10u 16V
1163
3173 150R
AP-SNDR-MON-OUT
7171-2 BC847BS
1165
3174 1K0
1167
AUDIO-SW-EXT
2102 16V 10u
1166
3127 150R
AP-SUBW-OUT
7180 BC847BW
1168
3166 1K0
AUDIO-OUT1-L
2187 10u 16V
1169
3187 150R
1170
AP-SCART1-OUT-L
7187-1 BC847BS
1171
3188 1K0
AUDIO-OUT1-R
2189 10u 16V
1172
3189 150R
1173
AP-SCART1-OUT-R
7187-2 BC847BS
1174
3190 1K0
A-PLOP
+8V6-AIO
3128 1K0
2190 100u 16V
3110 82K
1175
2112 1u0 16V
3112 56K
3111 3K9
1108
3113 100R
BC847BS 7112-2
IN-CENTER
3119 27K
2113 1u0
1110
7112-1 BC847BS
1176
3191 47K
3115 1K8
1101
2114 16V 1u0
3114 1K0
AUDIO-CENTER-IN
8204 000 8327.4
E_14700_035.eps
011004

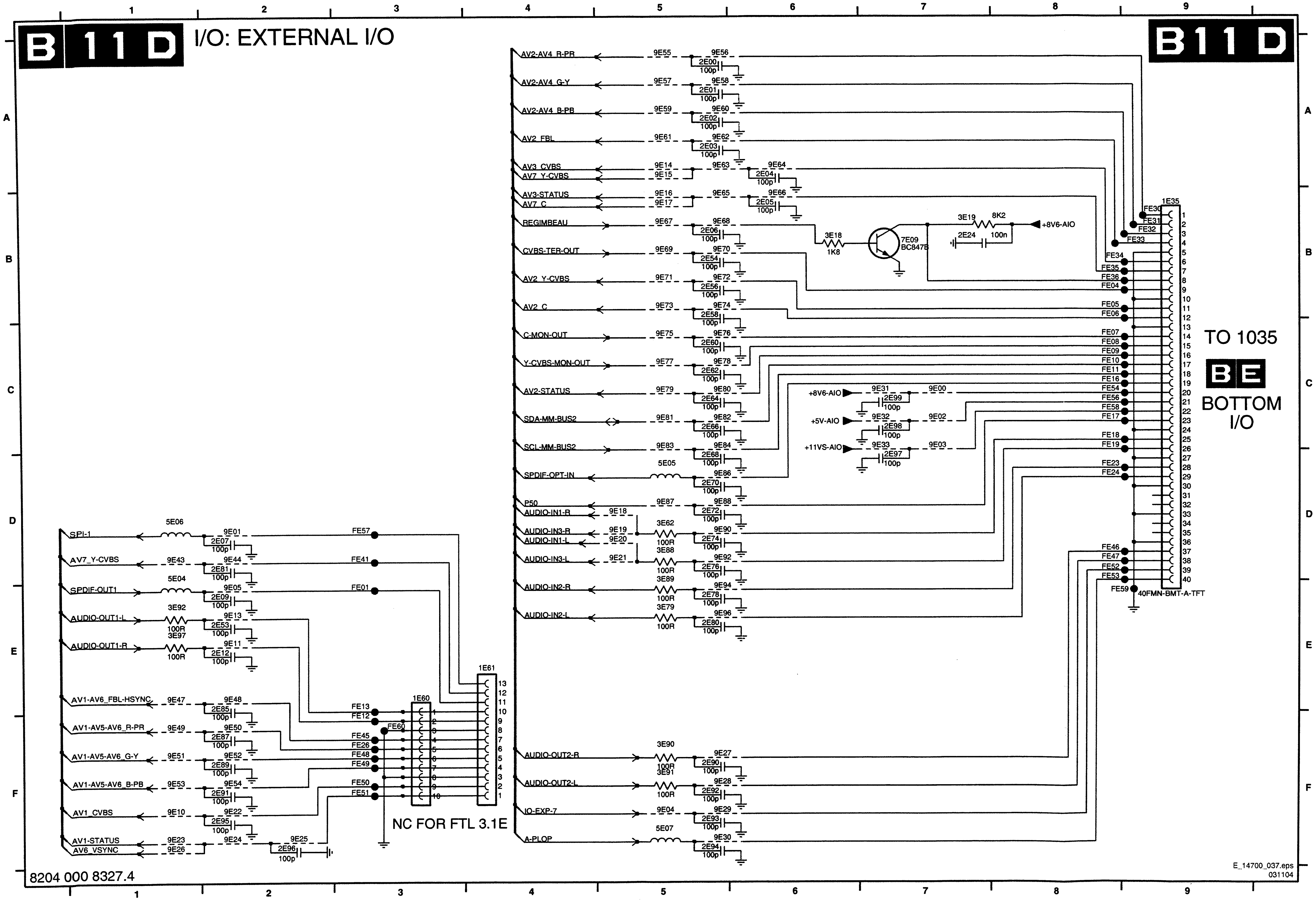
1100	B1
1101	B8
1102	B2
1103	D1
1104	B2
1105	C1
1107	A8
1108	C2
1109	D2
1110	B8
1124	A8
1131	C8
1132	E2
1133	C8
2100	B6
2101	B3
2102	C11
2103	B3
2104	E3
2105	C6
2106	C6
2107	C3
2108	A6
2109	D3
2112	H2
2113	I2
2114	I3
2161	B5
2162	C5
2163	C5
2164	C5
2170	D9
2171	A11
2173	B11
2187	G11
2189	H11
2190	H1
2191	F6
2192	G6
2193	G6
2194	G6
2195	G6
2196	H6
2197	H6
2198	F6
3101	A6
3102	B6
3103	B7
3104	B3
3105	B4
3106	C3
3107	C3
3108	D3
3109	D3
3110	H2
3111	H2
3112	H2
3113	H3
3114	I3
3115	I2
3116	B3
3118	E3
3119	I1
3122	B7
3123	C6
3124	A7
3125	C7
3126	C6
3127	C11
3128	H1
3143	A6
3144	B6
3145	C6
3166	C12
3167	E8
3168	E8
3171	A11
3172	A12
3173	B11
3174	B12
3187	G11
3188	G12
3189	H11
3190	H12
3191	I2
5100	A4
5102	E4
6100	B7
6101	B7
6102	B2
6103	B2
6104	B2
6105	C2
6108	C2
6109	D2
6110	D2
6111	D2
6112	A7
6124	A7
6132	C7
6133	E2
6134	C7
6135	E2
6136	C7
6138	D7
7112-1	I2
7112-2	I3
7155	D9
7171-1	B12
7171-2	B12
7180	C12
7187-1	G12
7187-2	H12
9191	F6
9192	G6
9194	G6
9196	H6
F100	B8
F101	A2
F102	B2
F103	B1
F105	C2
F106	D2
F108	E2
F111	C8
F112	B8
F124	A8
I101	I3
I102	F6
I103	G6
I104	G6
I105	H6
I108	H3
I110	I2
I160	A11
I161	A12
I162	A12
I163	B11
I164	B12
I165	B12
I166	C11
I167	C12
I168	C12
I169	G11
I170	G12
I171	G12
I172	H11
I173	H12
I174	H12
I175	H2
I176	I2
I185	D10
I186	D10
I187	D10
I188	E10
I189	E10
I191	F9
I192	F9

Small Signal Board: I/O: SPDIF


B11C
I/O: SPDIF
B11C
+3V3-AIO
3158
2R2
I193
2158
100n
2159
100u 16V
3150
22K
7194-1
74HCU04PW
7194-2
74HCU04PW
I157
SPDIF-SEL-OUT1
I136
3152
68R
SPDIF-IN1
2150
100p
3151
47K
2151
100p
3134
22K
7194-3
74HCU04PW
7194-4
74HCU04PW
I158
SPDIF-SEL-OUT2
I140
3157
68R
SPDIF-IN2
2152
100p
3156
47K
2153
100p
9188
JTAG-TD-SPIDER-ANAIO
JTAG-TD-ANAIO-DIGIO
9189
RES
7194-5
74HCU04PW
7194-6
74HCU04PW
SPDIF-OUT1
I132
9142
2154
100n
I177
SPI-OUT
3162
68R
RES
+5V-AIO
2135
100n
7190
74HC4053
I153
2136
100n
3135
47K
3136
47K
3137
47K
3140
75R
9137
I148
I146
2137
100n
I154
SPI-1
2138
100n
9135
SPI-2
I155
9136
SPDIF-OPT-IN
I144
2139
100n
I156
SPDIF-HDMI
3141
47K
IO-EXP-1
SPDIF-SEL-OUT1
I150
IO-EXP-2
MUXDX
1y0
1y1
2y0
2y1
3y0
3y1
GND
VEE
VCC
G3
SPDIF
SELECTORS
+5V-AIO
2140
100n
7191
74HC4053
IO-EXP-3
3142
47K
SPDIF-SEL-OUT2
IO-EXP-4
9138
9141
8204 000 8327.4
E_14700_036.eps
011004

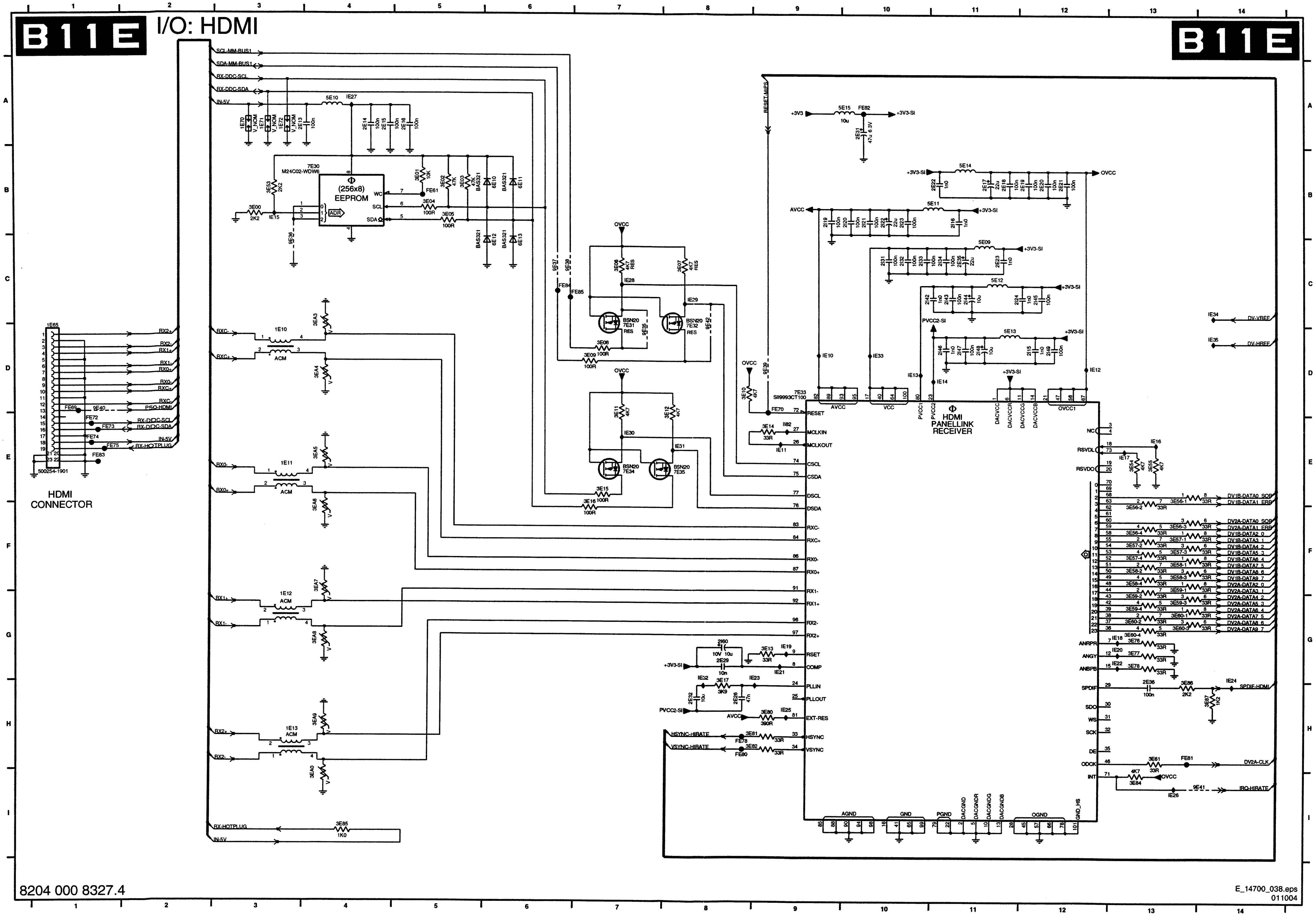
2135	A8
2136	A8
2137	B8
2138	B8
2139	B8
2140	D7
2150	B3
2151	B4
2152	D3
2153	C4
2154	E4
2158	B1
2159	B1
3134	C2
3135	B7
3136	B8
3137	B8
3140	B9
3141	B7
3142	E7
3150	B2
3151	B3
3152	B4
3156	D3
3157	C4
3158	A2
3162	F2
7190	A7
7191	D7
7194-1	B2
7194-2	B3
7194-3	C2
7194-4	C3
7194-5	E2
7194-6	E3
9135	B9
9136	B8
9137	B6
9138	F8
9141	F8
9142	E4
9188	D4
9189	E3
I132	E3
I136	B3
I140	C3
I144	B7
I146	B7
I148	B7
I150	C6
I153	A8
I154	B9
I155	B8
I156	B9
I157	B2
I158	C2
I177	E4
I193	A2

Small Signal Board: I/O: External I/O


B11D
I/O: EXTERNAL I/O
AV2-AV4_R-PR
AV2-AV4_G-Y
AV2-AV4_B-PB
AV2_FBL
AV3_CVBS
AV7_Y-CVBS
AV3-STATUS
AV7_C
REGIMBEAU
CVBS-TER-OUT
AV2_Y-CVBS
AV2_C
C-MON-OUT
Y-CVBS-MON-OUT
AV2-STATUS
SDA-MM-BUS2
SCL-MM-BUS2
SPDIF-OPT-IN
P50
AUDIO-IN1-R
AUDIO-IN3-R
AUDIO-IN1-L
AUDIO-IN3-L
AUDIO-IN2-R
AUDIO-IN2-L
AUDIO-OUT2-R
AUDIO-OUT2-L
IO-EXP-7
A-PLOP
SPI-1
AV7_Y-CVBS
SPDIF-OUT1
AUDIO-OUT1-L
AUDIO-OUT1-R
AV1-AV6_FBL-HSYNC
AV1-AV5-AV6_R-PR
AV1-AV5-AV6_G-Y
AV1-AV5-AV6_B-PB
AV1_CVBS
AV1-STATUS
AV6_VSYNC
+8V6-AIO
+5V-AIO
+11VS-AIO
7E09
BC847B
3E18
1K8
3E19
8K2
2E24
100n
1E35
40FMN-BMT-A-TFT
1E60
1E61
NC FOR FTL 3.1E
TO 1035
BE
BOTTOM I/O
8204 000 8327.4
E_14700_037.eps
031104

Item	Loc
1E35	B9
1E60	E3
1E61	E4
2E00	A5
2E01	A5
2E02	A5
2E03	A5
2E04	A6
2E05	B6
2E06	B5
2E07	D2
2E09	E2
2E12	E2
2E24	B7
2E53	E2
2E54	B5
2E56	B5
2E58	B5
2E60	C5
2E62	C5
2E64	C5
2E66	C5
2E68	D5
2E70	D5
2E72	D5
2E74	D5
2E76	D5
2E78	E5
2E80	E5
2E81	D2
2E85	E2
2E87	F2
2E89	F2
2E90	F5
2E91	F2
2E92	F5
2E93	F5
2E94	F5
2E95	F2
2E96	F2
2E97	D7
2E98	C7
2E99	C7
3E18	B6
3E19	B7
3E62	D5
3E79	E5
3E88	D5
3E89	E5
3E90	F5
3E91	F5
3E92	E1
3E97	E1
5E04	D1
5E05	D5
5E06	D1
5E07	F5
7E09	B7
9E00	C7
9E01	D2
9E02	C7
9E03	C7
9E04	F5
9E05	E2
9E10	F1
9E11	E2
9E13	E2
9E14	A5
9E15	A5
9E16	B5
9E17	B5
9E18	D5
9E19	D5
9E20	D5
9E21	D5
9E22	F2
9E23	F1
9E24	F2
9E25	F2
9E26	F1
9E27	F5
9E28	F5
9E29	F5
9E30	F5
9E31	C7
9E32	C7
9E33	C7
9E43	D1
9E44	D2
9E47	E1
9E48	E2
9E49	F1
9E50	F2
9E51	F1
9E52	F2
9E53	F1
9E54	F2
9E55	A5
9E56	A5
9E57	A5
9E58	A5
9E59	A5
9E60	A5
9E61	A5
9E62	A5
9E63	A5
9E64	A6
9E65	B5
9E66	B6
9E67	B5
9E68	B5
9E69	B5
9E70	B5
9E71	B5
9E72	B5
9E73	B5
9E74	B5
9E75	C5
9E76	C5
9E77	C5
9E78	C5
9E79	C5
9E80	C5
9E81	C5
9E82	C5
9E83	C5
9E84	C5
9E86	D5
9E87	D5
9E88	D5
9E90	D5
9E92	D5
9E94	E5
9E96	E5
FE01	E3
FE04	B8
FE05	B8
FE06	B8
FE07	C8
FE08	C8
FE09	C8
FE10	C8
FE11	C8
FE12	F3
FE13	E3
FE16	C8
FE17	C8
FE18	C8
FE19	C8
FE23	D8
FE24	D8
FE26	F3
FE30	B9
FE31	B9
FE32	B9
FE33	B9
FE34	B8
FE35	B8
FE36	B8
FE41	D3
FE45	F3
FE46	D8
FE47	D8
FE48	F3
FE49	F3
FE50	F3
FE51	F3
FE52	D8
FE53	D8
FE54	C8
FE56	C8
FE57	D3
FE58	C8
FE59	E8
FE60	F3

Small Signal Board: I/O: HDMI

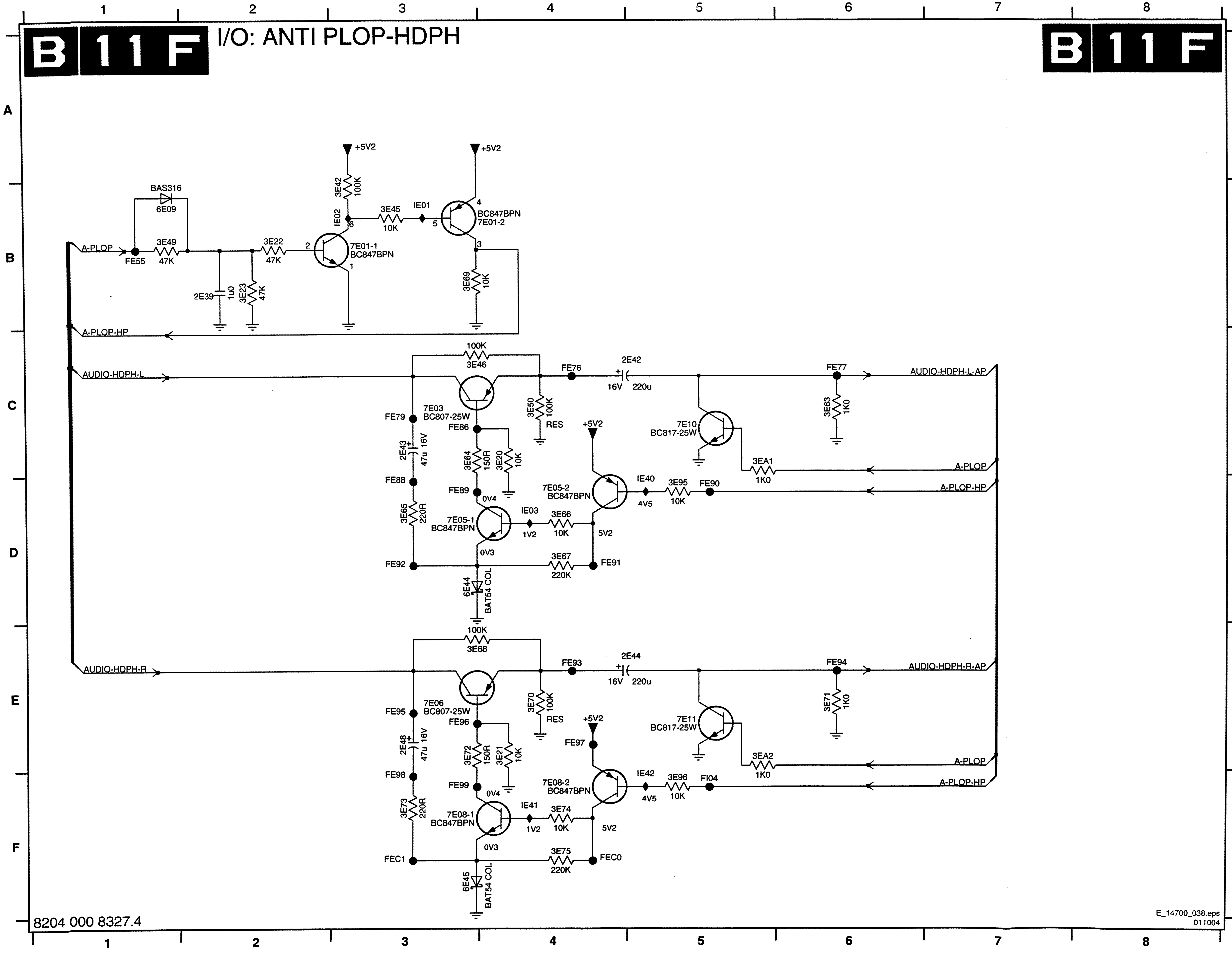

B11E
I/O: HDMI
B11E
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
SCL-MM-BUS1
SDA-MM-BUS1
RX-DDC-SCL
RX-DDC-SDA
IN-5V
5E10
1E27
1E70
1E71
1E72
V_NOM
2E13
2E14
2E15
2E16
2E18
100n
7E30
M24C02-WDW6
(256x8)
EEPROM
WC
SCL
SDA
ADR
3E53
2K2
3E00
2K2
1E15
9E36
3E01
10K
FE61
3E02
47K
3E03
47K
BAS321
6E10
6E11
6E12
6E13
3E04
100R
3E05
100R
OVCC
3E06
4K7
RES
3E07
4K7
RES
1E28
1E29
9E37
9E38
FE84
FE85
BSN20
7E31
7E32
9E35
9E42
3E08
100R
3E09
100R
3E11
4K7
3E12
4K7
1E30
1E31
BSN20
7E34
7E35
3E15
100R
3E16
100R
1E65
500254-1901
FE69
9E40
FE72
FE73
FE74
FE75
FE83
RX2+
RX2-
RX1+
RX1-
RX0+
RX0-
RXC+
RXC-
P50-HDMI
RX-DDC-SCL
RX-DDC-SDA
IN-5V
RX-HOTPLUG
HDMI
CONNECTOR
1E10
ACM
3EA3
3EA4
1E11
3EA5
3EA6
1E12
3EA7
3EA8
1E13
3EA9
3EA0
3E85
1K0
RESET-MIPS
+3V3
5E15
FE82
10u
+3V3-SI
2E31
47u 6.3V
5E14
2E22
2E17
22u
2E19
2E20
2E21
OVCC
AVCC
5E11
2119
2120
2121
2122
2123
2116
5E09
2131
2132
2133
2134
2E35
2E23
5E12
2142
2143
2144
2124
2145
PVCC2-SI
5E13
2146
2147
2148
2115
2149
1E10
1E33
1E13
1E14
1E12
OVCC
3E10
4K7
9E39
7E33
SII9993CT100
FE70
RESET
3E14
33R
1I82
1E11
MCLKIN
MCLKOUT
CSCL
CSDA
DSCL
DSDA
RXC-
RXC+
RX0-
RX0+
RX1-
RX1+
RX2-
RX2+
AVCC
VCC
PVCC1
PVCC2
HDMI
PANELLINK
RECEIVER
DACVCC
DACVCCR
DACVCCG
DACVCCB
OVCC1
NC
RSVDL
RSVDO
1E16
1E17
3E54
4K7
3E55
4K7
2160
10V 10u
2E29
10n
3E13
33R
1E19
1E21
RSET
COMP
1E32
3E17
3K9
1E23
2E32
10u
2E26
47n
PLLIN
PLLOUT
PVCC2-SI
AVCC
3E80
390R
1E25
EXT-RES
HSYNC-HIRATE
VSYNC-HIRATE
3E81
FE78
33R
3E82
FE80
33R
HSYNC
VSYNC
AGND
GND
PGND
DACGND
DACGNDR
DACGNDG
DACGNDB
OGND
GND_HS
3E56-1
3E56-2
3E56-3
3E56-4
3E57-1
3E57-2
3E57-3
3E57-4
3E58-1
3E58-2
3E58-3
3E58-4
3E59-1
3E59-2
3E59-3
3E59-4
3E60-1
3E60-2
3E60-3
3E60-4
33R
DV1B-DATA0 SOF
DV1B-DATA1 ERR
DV2A-DATA0 SOF
DV2A-DATA1 ERR
DV1B-DATA2 0
DV1B-DATA3 1
DV1B-DATA4 2
DV1B-DATA5 3
DV1B-DATA6 4
DV1B-DATA7 5
DV1B-DATA8 6
DV1B-DATA9 7
DV2A-DATA2 0
DV2A-DATA3 1
DV2A-DATA4 2
DV2A-DATA5 3
DV2A-DATA6 4
DV2A-DATA7 5
DV2A-DATA8 6
DV2A-DATA9 7
1E34
DV-VREF
1E35
DV-HREF
ANRPR
ANGY
ANBPB
1E18
1E20
1E22
3E76
3E77
3E78
33R
SPDIF
2E36
100n
3E86
2K2
1E24
3E87
1K2
SPDIF-HDMI
SDO
WS
SCK
DE
ODCK
INT
3E61
33R
FE81
DV2A-CLK
4K7
3E84
OVCC
9E41
1E26
IRQ-HIRATE

8204 000 8327.4

E_14700_038.eps
011004

1E10	D3
1E11	E3
1E12	G3
1E13	H3
1E65	D1
1E70	A3
1E71	A3
1E72	A3
2E13	A3
2E14	A4
2E15	A4
2E16	A5
2E17	B11
2E18	B11
2E19	B12
2E20	B12
2E21	B12
2E22	B11
2E23	C11
2E26	H8
2E29	G8
2E31	A10
2E32	H8
2E35	C11
2E36	H13
2I15	D12
2I16	B11
2I19	B9
2I20	B10
2I21	B10
2I22	B10
2I23	B10
2I24	C11
2I31	C10
2I32	C10
2I33	C10
2I34	C11
2I42	C10
2I43	C11
2I44	C11
2I45	C12
2I46	D11
2I47	D11
2I48	D11
2I49	D12
2I60	G8
3E00	B3
3E01	B5
3E02	B5
3E03	B5
3E04	B5
3E05	B5
3E06	C7
3E07	C8
3E08	D7
3E09	D7
3E10	D8
3E11	D7
3E12	D8
3E13	G9
3E14	E9
3E15	E7
3E16	F7
3E17	H8
3E53	B3
3E54	E13
3E55	E13
3E56-1	E13
3E56-2	F13
3E56-3	F13
3E56-4	F13
3E57-1	F13
3E57-2	F13
3E57-3	F13
3E57-4	F13
3E58-1	F13
3E58-2	F13
3E58-3	F13
3E58-4	F13
3E59-1	F13
3E59-2	G13
3E59-3	G13
3E59-4	G13
3E60-1	G13
3E60-2	G13
3E60-3	G13
3E60-4	G13
3E61	H13
3E76	G13
3E77	G13
3E78	G13
3E80	H9
3E81	H8
3E82	H8
3E84	I13
3E85	I4
3E86	H13
3E87	H14
3EA0	I4
3EA3	D4
3EA4	D4
3EA5	E4
3EA6	F4
3EA7	G4
3EA8	G4
3EA9	H4
5E09	C11
5E10	A4
5E11	B11
5E12	C11
5E13	D11
5E14	B11
5E15	A10
6E10	B6
6E11	B6
6E12	C6
6E13	C6
7E30	B4
7E31	C7
7E32	C8
7E33	D9
7E34	E7
7E35	E8
9E35	D7
9E36	C3
9E37	C6
9E38	C6
9E39	D9
9E40	D1
9E41	I14
9E42	C8
FE61	B5
FE69	D1
FE70	D9
FE72	E1
FE73	E1
FE74	E1
FE75	E1
FE78	H8
FE80	H8
FE81	H13
FE82	A10
FE83	E1
FE84	C6
FE85	C7
IE10	D9
IE11	E9
IE12	D12
IE13	D10
IE14	D11
IE15	B3
IE16	E13
IE17	E13
IE18	G13
IE19	G9
IE20	G13
IE21	G9
IE22	G13
IE23	G9
IE24	G14
IE25	H9
IE26	I13
IE27	A4
IE28	C7
IE29	C8
IE30	E7
IE31	E8
IE32	G8
IE33	D10
IE34	C14
IE35	D14
II82	E9

Small Signal Board: I/O: Anti Plop-HDPH

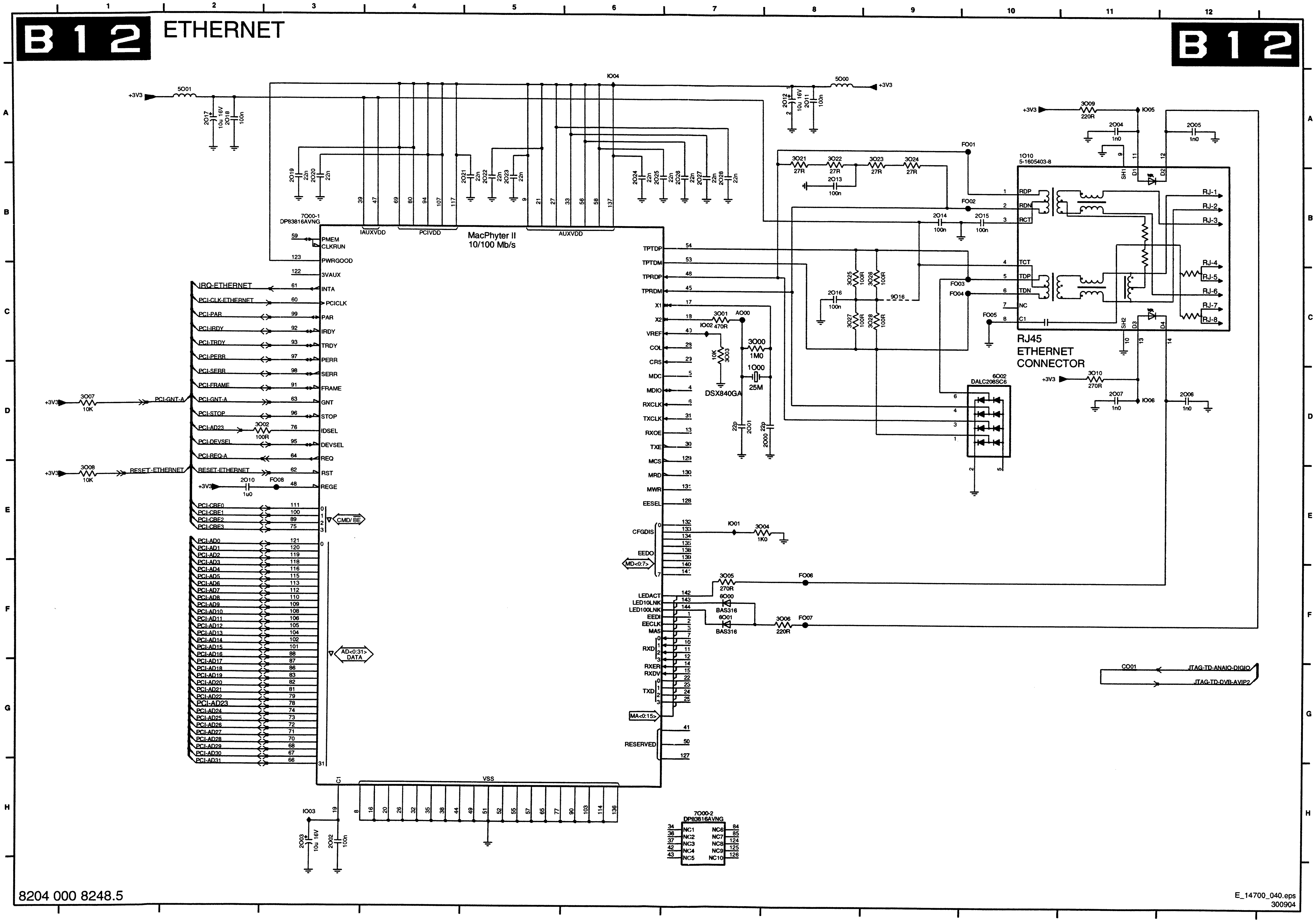


B11F
I/O: ANTI PLOP-HDPH
B11F
1 2 3 4 5 6 7 8
A B C D E F
+5V2
3E42 100K
+5V2
BAS316
6E09
3E45 10K
IE01
IE02
BC847BPN
7E01-2
A-PLOP
FE55
3E49 47K
3E22 47K
7E01-1
BC847BPN
2E39 1u0
3E23 47K
3E69 10K
A-PLOP-HP
AUDIO-HDPH-L
100K
3E46
FE76
2E42
16V 220u
FE77
AUDIO-HDPH-L-AP
FE79
7E03
BC807-25W
FE86
3E50 100K
RES
3E63 1K0
7E10
BC817-25W
2E43 47u 16V
3E64 150R
3E20 10K
+5V2
3EA1 1K0
A-PLOP
FE88
FE89
0V4
7E05-2
BC847BPN
IE40
4V5
3E95 10K
FE90
A-PLOP-HP
3E65 220R
7E05-1
BC847BPN
IE03
1V2
3E66 10K
5V2
FE92
0V3
3E67 220K
FE91
6E44
BAT54 COL
100K
3E68
AUDIO-HDPH-R
FE93
2E44
16V 220u
FE94
AUDIO-HDPH-R-AP
FE95
7E06
BC807-25W
FE96
3E70 100K
RES
3E71 1K0
7E11
BC817-25W
2E48 47u 16V
3E72 150R
3E21 10K
+5V2
FE97
3EA2 1K0
A-PLOP
FE98
FE99
0V4
7E08-2
BC847BPN
IE42
4V5
3E96 10K
FI04
A-PLOP-HP
3E73 220R
7E08-1
BC847BPN
IE41
1V2
3E74 10K
5V2
FEC1
0V3
3E75 220K
FEC0
6E45
BAT54 COL
8204 000 8327.4
E_14700_038.eps
011004

2E39	B2	FE86	C3
2E42	C5	FE88	D3
2E43	C3	FE89	D3
2E44	E5	FE90	D5
2E48	E3	FE91	D4
3E20	C4	FE92	D3
3E21	E4	FE93	E4
3E22	B2	FE94	E6
3E23	B2	FE95	E3
3E42	B3	FE96	E3
3E45	B3	FE97	E4
3E46	C3	FE98	F3
3E49	B1	FE99	F3
3E50	C4	FEC0	F4
3E63	C6	FEC1	F3
3E64	C3	FI04	F5
3E65	D3	IE01	B3
3E66	D4	IE02	B3
3E67	D4	IE03	D4
3E68	E3	IE40	D5
3E69	B3	IE41	F4
3E70	E4	IE42	F5
3E71	E6		
3E72	E3		
3E73	F3		
3E74	F4		
3E75	F4		
3E95	D5		
3E96	F5		
3EA1	C5		
3EA2	E5		
6E09	B1		
6E44	D3		
6E45	F3		
7E01-1	B3		
7E01-2	B3		
7E03	C3		
7E05-1	D3		
7E05-2	D4		
7E06	E3		
7E08-1	F3		
7E08-2	F4		
7E10	C5		
7E11	E5		
FE55	B1		
FE76	C4		
FE77	C6		
FE79	C3		

Small Signal B oard: Ethernet (Optional)

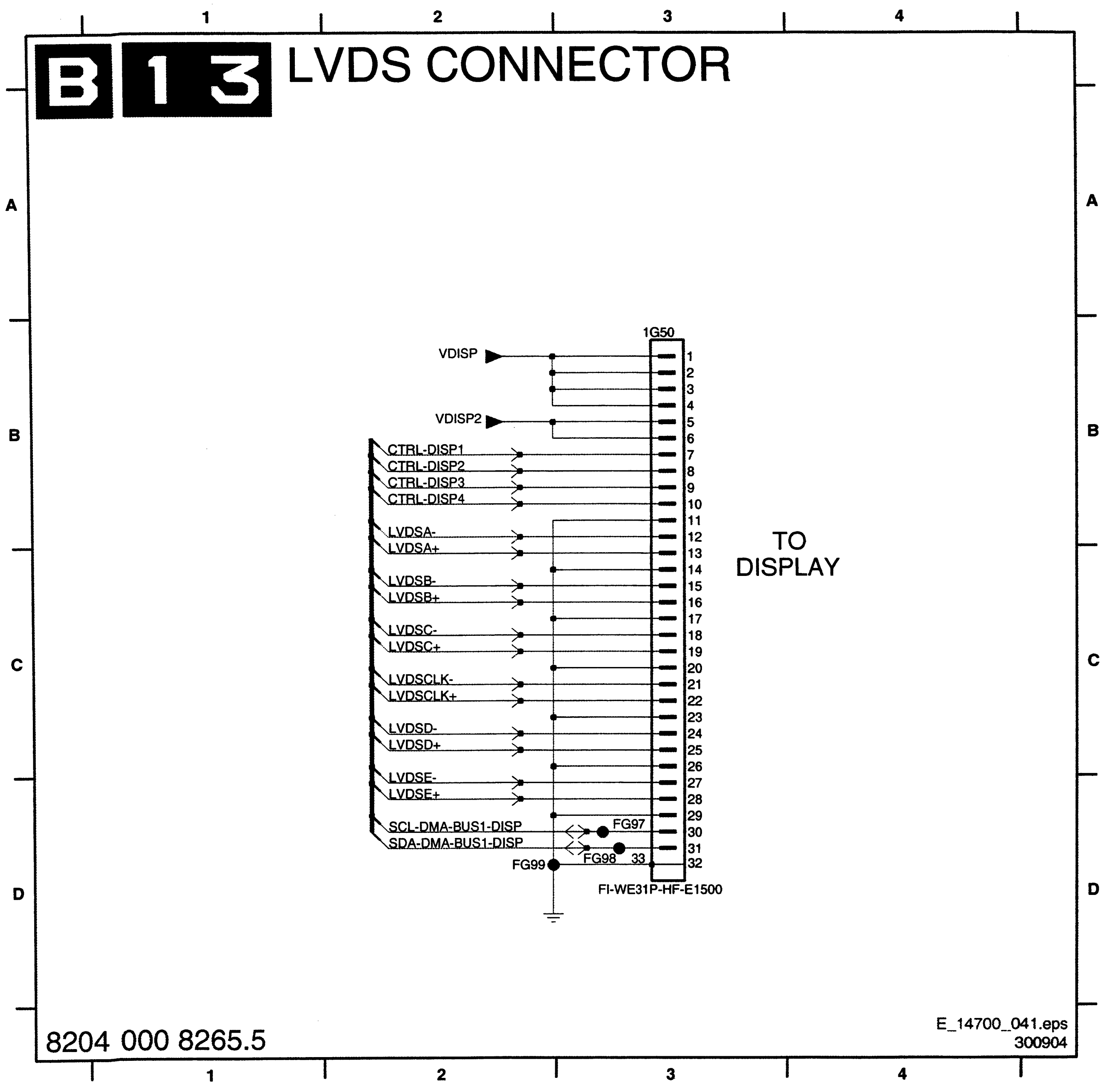
1000	D7
1010	A10
2000	D7
2001	D7
2002	H3
2003	H3
2004	A11
2005	A12
2006	D12
2007	D11
2010	E2
2011	A8
2012	A8
2013	B8
2014	B9
2015	B10
2016	C8
2017	A2
2018	A2
2019	B3
2020	B3
2021	B5
2022	B5
2023	B5
2024	B6
2025	B6
2026	B7
2027	B7
2028	B7
3000	C7
3001	C7
3002	D2
3003	C7
3004	E7
3005	F7
3006	F8
3007	D1
3008	E1
3009	A11
3010	D11
3021	A8
3022	A8
3023	A9
3024	A9
3025	C8
3026	C9
3027	C8
3028	C9
5000	A8
5001	A2
6000	F7
6001	F7
6002	D10
7000-1	B3
7000-2	H7
9016	C9
A000	C7
C001	G11
F001	A10
F002	B10
F003	C9
F004	C9
F005	C10
F006	F8
F007	F8
F008	E3
I001	E7
I002	C7
I003	H3
I004	A6
I005	A11
I006	D11



B 1 2
ETHERNET
B 1 2
+3V3
5001
2017 10u 16V
2018 100n
I004
5000
2012 10u 16V
2011 100n
2019 22n
2020 22n
2021 22n
2022 22n
2023 22n
2024 22n
2025 22n
2026 22n
2027 22n
2028 22n
7000-1 DP83816AVNG
IAUXVDD
PCIVDD
AUXVDD
MacPhyter II 10/100 Mb/s
PMEM CLKRUN
PWRGOOD
3VAUX
INTA
PCICLK
PAR
IRDY
TRDY
PERR
SERR
FRAME
GNT
STOP
IDSEL
DEVSEL
REQ
RST
REGE
IRQ-ETHERNET
PCI-CLK-ETHERNET
PCI-PAR
PCI-IRDY
PCI-TRDY
PCI-PERR
PCI-SERR
PCI-FRAME
PCI-GNT-A
PCI-STOP
PCI-AD23
PCI-DEVSEL
PCI-REQ-A
RESET-ETHERNET
3007 10K
3008 10K
3002 100R
2010 1u0
F008
PCI-CBE0
PCI-CBE1
PCI-CBE2
PCI-CBE3
CMD/ BE
PCI-AD0 … PCI-AD31
AD<0:31> DATA
TPTDP
TPTDM
TPRDP
TPRDM
X1
X2
VREF
COL
CRS
MDC
MDIO
RXCLK
TXCLK
RXOE
TXE
MCS
MRD
MWR
EESEL
CFGDIS
EEDO
MD<0:7>
LEDACT
LED10LNK
LED100LNK
EEDI
EECLK
MA5
RXD
RXER
RXDV
TXD
MA<0:15>
RESERVED
VSS
C1
3001 470R
A000
I002
3003 10K
3000 1M0
1000 25M
DSX840GA
2001 22p
2000 22p
I001
3004 1K0
3005 270R
6000 BAS316
6001 BAS316
3006 220R
F006
F007
I003
2003 10u 16V
2002 100n
7000-2 DP83816AVNG
NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8 NC9 NC10
3021 27R
3022 27R
3023 27R
3024 27R
2013 100n
2014 100n
2015 100n
2016 100n
3025 100R
3026 100R
3027 100R
3028 100R
9016
F001
F002
F003
F004
F005
3009 220R
I005
2004 1n0
2005 1n0
1010 5-1605403-8
RDP
RDN
RCT
TCT
TDP
TDN
NC
C1
SH1
SH2
D1
D2
D3
D4
RJ-1
RJ-2
RJ-3
RJ-4
RJ-5
RJ-6
RJ-7
RJ-8
RJ45 ETHERNET CONNECTOR
3010 270R
2007 1n0
I006
2006 1n0
6002 DALC208SC6
C001
JTAG-TD-ANAIO-DIGIO
JTAG-TD-DVB-AVIP2
8204 000 8248.5
E_14700_040.eps 300904

Small Signal Board: LVDS Connector

1G50 B3 FG97 D3 FG98 D3 FG99 D2


B 1 3 LVDS CONNECTOR
1
2
3
4
A
B
C
D
1G50
VDISP
VDISP2
CTRL-DISP1
CTRL-DISP2
CTRL-DISP3
CTRL-DISP4
LVDSA-
LVDSA+
LVDSB-
LVDSB+
LVDSC-
LVDSC+
LVDSCLK-
LVDSCLK+
LVDSD-
LVDSD+
LVDSE-
LVDSE+
SCL-DMA-BUS1-DISP
SDA-DMA-BUS1-DISP
FG97
FG98
FG99
33
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
FI-WE31P-HF-E1500
TO DISPLAY
8204 000 8265.5
E_14700_041.eps
300904

SRP (Service Reference Protocol) Explanation

1.1. Introduction

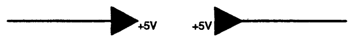
SRP (Service Reference Protocol) is a software tool that creates a list with all references to signal lines. The list contains references to the signals within all schematics of a PWB. It replaces the text references currently printed next to the signal names in the schematics. These printed references are created manually and are therefore not guaranteed to be 100% correct. In addition, in the current crowded schematics there is often none or very little place for these references.
Some of the PWB schematics will use SRP while others will still use the manual references. Either there will be an SRP reference list for a schematic, or there will be printed references in the schematic.

1.2. Non-SRP schematics

There are several different signals available in a schematic:

1.2.1. Power supply lines

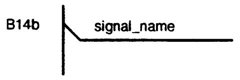
All power supply lines are available in the supply line overview (see chapter 6). In the schematics (see chapter 7) is not indicated where supplies are coming from or going to.
It is however indicated if a supply is incoming (created elsewhere), or outgoing (created or adapted in the current schematic).



Outgoing Incoming

1.2.2. Normal signals

For normal signals, a schematic reference (e.g. B14b) is placed next to the signals.

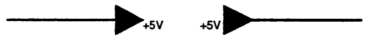

B14b
signal_name

1.2.3. Grounds

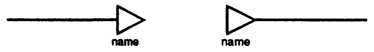
For normal and special grounds (e.g. GNDHOT or GND3V3 etc.), nothing is indicated.

1.3. SRP schematics

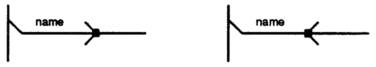
SRP is a tool, which automatically creates a list with signal references, indicating on which schematic the signals are used.
A reference is created for all signals indicated with an SRP symbol, these symbols are:



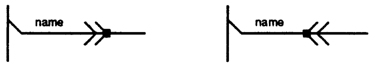
Power supply line.



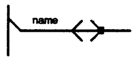
Stand alone signal or switching line (used as less as possible).



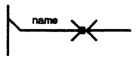
Signal line into a wire tree.



Switching line into a wire tree.



Bi-directional line (e.g. SDA) into a wire tree.



Signal line into a wire tree, its direction depends on the circuit (e.g. ingoing for PDP, outgoing for LCD sets).

Remarks:

- When there is a black dot on the "signal direction arrow" it is an SRP symbol, so there re will be a reference to the signal name in the SRP list.
- All references to normal grounds (Ground symbols without additional text) are not listed in the reference list, this to keep it concise.
- Signals that are not used in multiple schematics, but only once or several times in the same schematic are not included in the SRP reference list.

Additional tip:
When using the PDF service manual file, you can very easily search for signal names and follow the signal over all the schematics. In Adobe PDF reader:

- Select the signal name you want to search for, with the "Select text" tool.
- Copy and paste the signal name in the "Search PDF" tool.
- Search for all occurrences of the signal name.
- Now you can quickly jump between the different occurrences and follow the signal over all schematics. It is advised to "zoom in" to e.g. 150% to see clearly, which text is selected. Then you can zoom out, to get an overview of the complete schematic.

PS. It is recommended to use at least Adobe PDF (reader) version 6.x, due to better search possibilities in this version.

E_14700_101.eps
151104

Small Signal Board: SRP (Signal References)

Diagr.	Netname
B11b	+11VS-AIO
B11d	+11VS-AIO
B01	+12V
B07a	+12V
B07c	+12V
B01	+12VS
B09d	+12VS
B09f	+12VS
B10	+12VS
B01	+12VSW
B04e	+12VSW
B07c	+12VSW
B11b	+12VSW
B01	+1V2
B06d	+1V2
B07a	+1V2
B09a	+1V5
B09a	+1V5-PLA
B04d	+1V8
B05d	+1V8-SUB
B01	+2V5
B06d	+2V5
B07a	+2V5
B01	+2V5D
B06b	+2V5D
B06b	+2V5D-DDR
B06b	+2V5-VPR
B06d	+2V5-VPR
B08	+2V5-VPR
B01	+2V8
B04b	+2V8
B04f	+2V8
B05b	+2V8
B01	+3V3
B04d	+3V3
B04f	+3V3
B05d	+3V3
B06a	+3V3
B06c	+3V3
B06d	+3V3
B06e	+3V3
B07a	+3V3
B07b	+3V3
B07c	+3V3
B08	+3V3
B09a	+3V3
B09c	+3V3
B09d	+3V3
B09e	+3V3
B11b	+3V3
B11e	+3V3
B12	+3V3
B11b	+3V3-AIO
B11c	+3V3-AIO
B07c	+3V3-AUD
B09c	+3V3DAC
B09d	+3V3-EPLD
B09e	+3V3IO-TMDS
B07b	+3V3-NAND
B09a	+3V3-PLA
B11e	+3V3-SI
B01	+5V
B04b	+5V
B04e	+5V
B05b	+5V
B06a	+5V
B07a	+5V
B07c	+5V
B09d	+5V
B09e	+5V
B10	+5V
B11b	+5V
B01	+5V2
B07a	+5V2
B08	+5V2
B10	+5V2
B11a	+5V2
B11f	+5V2
B10	+5V2-STBY
B10	+5V2-STBY_9V-STBY
B04c	+5Va
B05c	+5Va
B11b	+5V-AIO
B11c	+5V-AIO
B11d	+5V-AIO
B07c	+5V-AUD
B04a	+5Vb
B04c	+5Vb
B05c	+5Vb
B09d	+5VDISP
B09f	+5VDISP
B04a	+5VMPIF
B04b	+5VMPIF
B04c	+5VMPIF
B05a	+5VMPIF
B05b	+5VMPIF
B05c	+5VMPIF
B03	+5VTUN
B07a	+5V-UP
B07b	+5V-UP
B07c	+5V-UP
B03	+8V6
B04b	+8V6
B05b	+8V6
B07a	+8V6
B07b	+8V6
B07c	+8V6
B09c	+8V6
B10	+8V6
B11b	+8V6
B11b	+8V6-AIO
B11d	+8V6-AIO
B04c	+8Va
B05c	+8Va
B07c	+8V-AUD
B09c	+8VCRT
B04b	+8VMPIF
B04c	+8VMPIF
B05b	+8VMPIF
B05c	+8VMPIF
B10	+9V-STBY
B03	+VTUN
B10	+VTUN
B03	+VTUN1
B01	12VSWITCH
B07a	12VSWITCH
B04f	1V5-COLUM
B04c	2NDSIFEXT
B05c	2NDSIFEXT
B04f	3V3-COLUM
B04c	4V
B05c	4V
B03	AGC1
B05c	AGC1
B03	AGC2
B04c	AGC2
B06a	A-PLOP
B07c	A-PLOP
B10	A-PLOP
B11b	A-PLOP
B11d	A-PLOP
B11f	A-PLOP
B11f	A-PLOP-HP
B11a	AP-SCART1-OUT-L
B11b	AP-SCART1-OUT-L
B11a	AP-SCART1-OUT-R
B11b	AP-SCART1-OUT-R
B11b	AP-SNDL-MON-OUT
B11b	AP-SNDR-MON-OUT
B11b	AP-SUBW-OUT
B04e	AUDIO-C
B10	AUDIO-C
B04g	AUDIO-CENTER-IN
B05g	AUDIO-CENTER-IN
B11b	AUDIO-CENTER-IN
B04e	AUDIO-HDPH-L
B11f	AUDIO-HDPH-L
B10	AUDIO-HDPH-L-AP
B11f	AUDIO-HDPH-L-AP
B04e	AUDIO-HDPH-R
B11f	AUDIO-HDPH-R
B10	AUDIO-HDPH-R-AP
B11f	AUDIO-HDPH-R-AP
B04g	AUDIO-IN1-L
B05g	AUDIO-IN1-L
B11a	AUDIO-IN1-L
B11d	AUDIO-IN1-L
B04g	AUDIO-IN1-R
B05g	AUDIO-IN1-R
B11a	AUDIO-IN1-R
B11d	AUDIO-IN1-R
B04g	AUDIO-IN2-L
B05g	AUDIO-IN2-L
B11d	AUDIO-IN2-L
B04g	AUDIO-IN2-R
B05g	AUDIO-IN2-R
B11d	AUDIO-IN2-R
B04g	AUDIO-IN3-L
B05g	AUDIO-IN3-L
B11d	AUDIO-IN3-L
B04g	AUDIO-IN3-R
B05g	AUDIO-IN3-R
B11d	AUDIO-IN3-R
B04g	AUDIO-IN4-L
B05g	AUDIO-IN4-L
B11b	AUDIO-IN4-L
B04g	AUDIO-IN4-R
B05g	AUDIO-IN4-R
B11b	AUDIO-IN4-R
B04g	AUDIO-IN5-L
B05g	AUDIO-IN5-L
B10	AUDIO-IN5-L
B04g	AUDIO-IN5-R
B05g	AUDIO-IN5-R
B10	AUDIO-IN5-R
B04e	AUDIO-L
B10	AUDIO-L
B04g	AUDIO-OUT1-L
B11b	AUDIO-OUT1-L
B11d	AUDIO-OUT1-L
B04g	AUDIO-OUT1-R
B11b	AUDIO-OUT1-R
B11d	AUDIO-OUT1-R
B04g	AUDIO-OUT2-L
B11d	AUDIO-OUT2-L
B04g	AUDIO-OUT2-R
B11d	AUDIO-OUT2-R
B04g	AUDIO-OUT3-L
B11b	AUDIO-OUT3-L
B04g	AUDIO-OUT3-R
B11b	AUDIO-OUT3-R
B04e	AUDIO-R
B10	AUDIO-R
B07a	AUDIO-SUPPLY-PROT
B07c	AUDIO-SUPPLY-PROT
B04e	AUDIO-SW
B10	AUDIO-SW
B04e	AUDIO-SW-EXT
B11b	AUDIO-SW-EXT
B04a	AV1_CVBS
B05a	AV1_CVBS
B11a	AV1_CVBS
B11d	AV1_CVBS
B04a	AV1-AV5-AV6_B-PB
B05a	AV1-AV5-AV6_B-PB
B11a	AV1-AV5-AV6_B-PB
B11d	AV1-AV5-AV6_B-PB
B04a	AV1-AV5-AV6_G-Y
B05a	AV1-AV5-AV6_G-Y
B11a	AV1-AV5-AV6_G-Y
B11d	AV1-AV5-AV6_G-Y
B04a	AV1-AV5-AV6_R-PR
B05a	AV1-AV5-AV6_R-PR
B11a	AV1-AV5-AV6_R-PR
B11d	AV1-AV5-AV6_R-PR
B04d	AV1-AV6_FBL-HSYNC
B05d	AV1-AV6_FBL-HSYNC
B11a	AV1-AV6_FBL-HSYNC
B11d	AV1-AV6_FBL-HSYNC
B07a	AV1-STATUS
B11a	AV1-STATUS
B11d	AV1-STATUS
B04a	AV2_C
B05a	AV2_C
B11d	AV2_C
B04d	AV2_FBL
B05d	AV2_FBL
B11d	AV2_FBL
B04a	AV2_Y-CVBS
B05a	AV2_Y-CVBS
B11d	AV2_Y-CVBS
B04a	AV2-AV4_B-PB
B05a	AV2-AV4_B-PB
B11d	AV2-AV4_B-PB
B04a	AV2-AV4_G-Y
B05a	AV2-AV4_G-Y
B11d	AV2-AV4_G-Y
B04a	AV2-AV4_R-PR
B05a	AV2-AV4_R-PR
B11d	AV2-AV4_R-PR
B07a	AV2-STATUS
B11d	AV2-STATUS
B04a	AV3_CVBS
B05a	AV3_CVBS
B11d	AV3_CVBS
B07a	AV3-STATUS
B11d	AV3-STATUS
B04d	AV6_VSYNC
B11d	AV6_VSYNC
B04d	AV6_VSYNC_SUB
B05d	AV6_VSYNC_SUB
B04a	AV7_C
B05a	AV7_C
B11d	AV7_C
B04a	AV7_Y-CVBS
B05a	AV7_Y-CVBS
B11d	AV7_Y-CVBS
B07a	AV7-STATUS
B09c	AV-BOUT
B11e	AVCC
B09c	AV-GOUT
B09c	AV-ROUT
B06c	BACKLIGHT-CNTRL
B07a	BACKLIGHT-CNTRL
B10	BACKLIGHT-CNTRL
B09c	B-CRT
B09e	B-CRT
B04b	CLK-MPIF
B04d	CLK-MPIF
B05b	CLK-MPIF
B05d	CLK-MPIF
B06c	C-MON-OUT
B11d	C-MON-OUT
B04f	COL-CLKO
B04f	COL-DATA-0
B04f	COL-DATA-1
B04f	COL-DATA-2
B04f	COL-DATA-3
B04f	COL-DATA-4
B04f	COL-DATA-5
B04f	COL-DATA-6
B04f	COL-DATA-7
B04f	COL-DATA-8
B04f	COL-DATA-9
B04f	COL-DQN
B04f	COL-SD-A0
B04f	COL-SD-A1
B04f	COL-SD-A10
B04f	COL-SD-A11
B04f	COL-SD-A2
B04f	COL-SD-A3
B04f	COL-SD-A4
B04f	COL-SD-A5
B04f	COL-SD-A6
B04f	COL-SD-A7
B04f	COL-SD-A8
B04f	COL-SD-A9
B04f	COL-SD-CASN
B04f	COL-SD-CLK
B04f	COL-SD-DQ1
B04f	COL-SD-DQ10
B04f	COL-SD-DQ11
B04f	COL-SD-DQ12
B04f	COL-SD-DQ13
B04f	COL-SD-DQ14
B04f	COL-SD-DQ15
B04f	COL-SD-DQ16
B04f	COL-SD-DQ2
B04f	COL-SD-DQ3
B04f	COL-SD-DQ4
B04f	COL-SD-DQ5
B04f	COL-SD-DQ6
B04f	COL-SD-DQ7
B04f	COL-SD-DQ8
B04f	COL-SD-DQ9
B04f	COL-SD-RASN
B04f	COL-SD-WEN
B04f	COL-VALID
B07a	COM-SND
B10	COM-SND
B09a	CTRL-1
B09b	CTRL-1
B09d	CTRL-1
B09a	CTRL-2
B09b	CTRL-2
B09d	CTRL-2
B09a	CTRL-3
B09b	CTRL-3
B09d	CTRL-3
B09d	CTRL-DISP1
B13	CTRL-DISP1
B09d	CTRL-DISP2
B13	CTRL-DISP2
B09d	CTRL-DISP3
B13	CTRL-DISP3
B09d	CTRL-DISP4
B13	CTRL-DISP4
B06a	CTSN-VIPER
B07a	CTSN-VIPER
B04a	CVBS-DTV
B05a	CVBS-DTV
B04a	CVBSOUTIF
B04c	CVBSOUTIF
B05a	CVBSOUTIF
B05c	CVBSOUTIF
B04a	CVBS-OUT-TER
B04c	CVBS-OUT-TER
B05a	CVBS-OUT-TER
B05c	CVBS-OUT-TER
B04a	CVBS-TER-OUT
B05a	CVBS-TER-OUT
B11a	CVBS-TER-OUT
B11d	CVBS-TER-OUT
B06c	DAC-CVBS
B07b	DAC-CVBS
B04a	DATA1N
B04d	DATA1N
B05a	DATA1N
B05d	DATA1N
B04a	DATA1P
B04d	DATA1P
B05a	DATA1P
B05d	DATA1P
B04a	DATA2N
B04d	DATA2N
B05a	DATA2N
B05d	DATA2N
B04a	DATA2P
B04d	DATA2P
B05a	DATA2P
B05d	DATA2P
B04a	DATA3N
B04d	DATA3N
B05a	DATA3N
B05d	DATA3N
B04a	DATA3P
B04d	DATA3P
B05a	DATA3P
B05d	DATA3P
B06a	DEBUG-BREAK
B07a	DEBUG-BREAK
B07a	DETECT-12V
B07c	DETECT-12V
B07a	DETECT-1V2
B07a	DETECT-2V5
B07a	DETECT-3V3
B07a	DETECT-5V
B07c	DETECT-5V
B07a	DETECT-8V6
B07a	DOOR-SWITCH_PD-LVDS
B09b	DOOR-SWITCH_PD-LVDS
B04e	DSNDL1
B04g	DSNDL1
B04e	DSNDL2
B04g	DSNDL2
B04e	DSNDR1
B04g	DSNDR1
B04e	DSNDR2
B04g	DSNDR2
B04f	DV1A-CLK
B06c	DV1A-CLK
B04f	DV1A-DATA0_SOP
B06c	DV1A-DATA0_SOP
B04f	DV1A-DATA1_ERR
B06c	DV1A-DATA1_ERR
B04f	DV1A-DATA2_0
B06c	DV1A-DATA2_0
B04f	DV1A-DATA3_1
B06c	DV1A-DATA3_1
B04f	DV1A-DATA4_2
B06c	DV1A-DATA4_2
B04f	DV1A-DATA5_3
B06c	DV1A-DATA5_3
B04f	DV1A-DATA6_4
B06c	DV1A-DATA6_4
B04f	DV1A-DATA7_5
B06c	DV1A-DATA7_5
B04f	DV1A-DATA8_6
B06c	DV1A-DATA8_6
B04f	DV1A-DATA9_7
B06c	DV1A-DATA9_7
B04f	DV1A-VALID
B06c	DV1A-VALID
B04f	DV1B-DATA0_SOP
B11e	DV1B-DATA0_SOP
B04f	DV1B-DATA1_ERR
B11e	DV1B-DATA1_ERR
B04f	DV1B-DATA2_0
B11e	DV1B-DATA2_0
B04f	DV1B-DATA3_1
B11e	DV1B-DATA3_1
B04f	DV1B-DATA4_2
B11e	DV1B-DATA4_2
B04f	DV1B-DATA5_3
B11e	DV1B-DATA5_3
B04f	DV1B-DATA6_4
B11e	DV1B-DATA6_4
B04f	DV1B-DATA7_5
B11e	DV1B-DATA7_5
B04f	DV1B-DATA8_6
B11e	DV1B-DATA8_6
B04f	DV1B-DATA9_7
B11e	DV1B-DATA9_7
B06c	DV2A-CLK
B11e	DV2A-CLK
B06c	DV2A-DATA0_SOP
B11e	DV2A-DATA0_SOP
B06c	DV2A-DATA1_ERR
B11e	DV2A-DATA1_ERR
B06c	DV2A-DATA2_0
B11e	DV2A-DATA2_0
B06c	DV2A-DATA3_1
B11e	DV2A-DATA3_1
B06c	DV2A-DATA4_2
B11e	DV2A-DATA4_2
B06c	DV2A-DATA5_3
B11e	DV2A-DATA5_3
B06c	DV2A-DATA6_4
B11e	DV2A-DATA6_4
B06c	DV2A-DATA7_5
B11e	DV2A-DATA7_5
B06c	DV2A-DATA8_6
B11e	DV2A-DATA8_6
B06c	DV2A-DATA9_7
B11e	DV2A-DATA9_7
B06c	DV2A-VALID
B05d	DV3A-CLK
B06c	DV3A-CLK
B05d	DV3A-DATA0_SOP
B06c	DV3A-DATA0_SOP
B05d	DV3A-DATA1_ERR
B06c	DV3A-DATA1_ERR
B05d	DV3A-DATA2_0
B06c	DV3A-DATA2_0
B05d	DV3A-DATA3_1
B06c	DV3A-DATA3_1
B05d	DV3A-DATA4_2
B06c	DV3A-DATA4_2
B05d	DV3A-DATA5_3
B06c	DV3A-DATA5_3
B05d	DV3A-DATA6_4
B06c	DV3A-DATA6_4
B05d	DV3A-DATA7_5
B06c	DV3A-DATA7_5
B05d	DV3A-DATA8_6
B06c	DV3A-DATA8_6
B05d	DV3A-DATA9_7
B06c	DV3A-DATA9_7
B05d	DV3A-VALID
B06c	DV3A-VALID
B06c	DV-BOUT-0
B09a	DV-BOUT-0
B09c	DV-BOUT-0
B06c	DV-BOUT-1
B09a	DV-BOUT-1
B09c	DV-BOUT-1
B06c	DV-BOUT-2
B09a	DV-BOUT-2
B09b	DV-BOUT-2
B09c	DV-BOUT-2
B06c	DV-BOUT-3
B09a	DV-BOUT-3
B09b	DV-BOUT-3
B09c	DV-BOUT-3
B06c	DV-BOUT-4
B09a	DV-BOUT-4
B09b	DV-BOUT-4
B09c	DV-BOUT-4
B06c	DV-BOUT-5
B09a	DV-BOUT-5
B09b	DV-BOUT-5
B09c	DV-BOUT-5
B06c	DV-BOUT-6
B09a	DV-BOUT-6
B09b	DV-BOUT-6
B09c	DV-BOUT-6
B06c	DV-BOUT-7
B09a	DV-BOUT-7
B09b	DV-BOUT-7
B09c	DV-BOUT-7
B06c	DV-BOUT-8
B09a	DV-BOUT-8
B09b	DV-BOUT-8
B09c	DV-BOUT-8
B06c	DV-BOUT-9
B09a	DV-BOUT-9
B09b	DV-BOUT-9
B09c	DV-BOUT-9
B09a	DV-CLKCRT
B09c	DV-CLKCRT
B06c	DV-CLKIN
B09a	DV-CLKIN
B09a	DV-CLKMOP
B09b	DV-CLKMOP
B06c	DV-FREF
B06c	DV-GOUT-0
B09a	DV-GOUT-0
B09c	DV-GOUT-0
B06c	DV-GOUT-1
B09a	DV-GOUT-1
B09c	DV-GOUT-1
B06c	DV-GOUT-2
B09a	DV-GOUT-2
B09b	DV-GOUT-2
B09c	DV-GOUT-2
B06c	DV-GOUT-3
B09a	DV-GOUT-3
B09b	DV-GOUT-3
B09c	DV-GOUT-3
B06c	DV-GOUT-4
B09a	DV-GOUT-4
B09b	DV-GOUT-4
B09c	DV-GOUT-4
B06c	DV-GOUT-5
B09a	DV-GOUT-5
B09b	DV-GOUT-5
B09c	DV-GOUT-5
B06c	DV-GOUT-6
B09a	DV-GOUT-6
B09b	DV-GOUT-6
B09c	DV-GOUT-6
B06c	DV-GOUT-7
B09a	DV-GOUT-7
B09b	DV-GOUT-7
B09c	DV-GOUT-7
B06c	DV-GOUT-8
B09a	DV-GOUT-8
B09b	DV-GOUT-8
B09c	DV-GOUT-8
B06c	DV-GOUT-9
B09a	DV-GOUT-9
B09b	DV-GOUT-9
B09c	DV-GOUT-9
B06c	DV-HREF
B11e	DV-HREF
B04d	DVO-CLK
B04f	DVO-CLK
B04d	DVO-DATA-0
B04f	DVO-DATA-0
B04d	DVO-DATA-1
B04f	DVO-DATA-1
B04d	DVO-DATA-2
B04f	DVO-DATA-2
B04d	DVO-DATA-3
B04f	DVO-DATA-3
B04d	DVO-DATA-4
B04f	DVO-DATA-4
B04d	DVO-DATA-5
B04f	DVO-DATA-5
B04d	DVO-DATA-6
B04f	DVO-DATA-6
B04d	DVO-DATA-7
B04f	DVO-DATA-7
B04d	DVO-DATA-8
B04f	DVO-DATA-8
B04d	DVO-DATA-9
B04f	DVO-DATA-9
B06c	DV-OUT-DE
B09a	DV-OUT-DE
B09b	DV-OUT-DE
B06c	DV-OUT-FFIELD
B09a	DV-OUT-FFIELD
B09b	DV-OUT-FFIELD
B06c	DV-OUT-HS
B09a	DV-OUT-HS
B09b	DV-OUT-HS
B06c	DV-OUT-VS
B09a	DV-OUT-VS
B09b	DV-OUT-VS
B04d	DVO-VALID
B04f	DVO-VALID
B06c	DV-ROUT-0
B09a	DV-ROUT-0
B09c	DV-ROUT-0
B06c	DV-ROUT-1
B09a	DV-ROUT-1
B09c	DV-ROUT-1
B06c	DV-ROUT-2
B09a	DV-ROUT-2
B09b	DV-ROUT-2
B09c	DV-ROUT-2
B06c	DV-ROUT-3
B09a	DV-ROUT-3
B09b	DV-ROUT-3
B09c	DV-ROUT-3
B06c	DV-ROUT-4
B09a	DV-ROUT-4
B09b	DV-ROUT-4
B09c	DV-ROUT-4
B06c	DV-ROUT-5
B09a	DV-ROUT-5
B09b	DV-ROUT-5
B09c	DV-ROUT-5
B06c	DV-ROUT-6
B09a	DV-ROUT-6
B09b	DV-ROUT-6
B09c	DV-ROUT-6
B06c	DV-ROUT-7
B09a	DV-ROUT-7
B09b	DV-ROUT-7
B09c	DV-ROUT-7
B06c	DV-ROUT-8
B09a	DV-ROUT-8
B09b	DV-ROUT-8
B09c	DV-ROUT-8
B06c	DV-ROUT-9
B09a	DV-ROUT-9
B09b	DV-ROUT-9
B09c	DV-ROUT-9
B06c	DV-VREF
B11e	DV-VREF
B06e	EJTAG-DETECT
B07a	EJTAG-DETECT
B06a	EJTAG-TCK
B06e	EJTAG-TCK
B06a	EJTAG-TDI
B06e	EJTAG-TDI
B06a	EJTAG-TDO
B06e	EJTAG-TDO
B06a	EJTAG-TMS
B06e	EJTAG-TMS
B01	ENABLE-1V2
B07a	ENABLE-1V2
B01	ENABLE-2V5
B07a	ENABLE-2V5
B01	ENABLE-3V3
B07a	ENABLE-3V3
B09d	ENABLE5V
B04e	EXT-I2S-CLK-B
B07a	FAN-COUNTER_LCD-PWR-ON
B09b	FAN-COUNTER_LCD-PWR-ON
B07a	FAN-SPEED
B06a	FRAME-50-60-VIPER
B06c	FRAME-50-60-VIPER
B04a	FRONT_C
B05a	FRONT_C
B10	FRONT_C
B04a	FRONT_Y-CVBS
B05a	FRONT_Y-CVBS
B10	FRONT_Y-CVBS
B07a	FRONT-DETECT
B10	FRONT-DETECT
B09c	G-CRT
B09e	G-CRT
B06a	GLINK-IR-OUT
B01	GND1V2
B01	GND2V8
B01	GND3V3
B09f	GND5V
B01	GND-HI-LINK
B06a	HDMI-COAST
B06a	HSYNC-HIRATE
B11e	HSYNC-HIRATE
B04a	HV-PRM
B04d	HV-PRM
B05a	HV-PRM
B05d	HV-PRM
B05e	I2S-AUX1-AI
B05f	I2S-AUX1-AI
B05e	I2S-AUX1-AO
B05f	I2S-AUX1-AO
B04e	I2S-AUX-MAIN
B04e	I2S-AUX-MAIN-O
B05f	I2S-AUX-MAIN-O
B04e	I2S-AUX-SUB-O
B05f	I2S-AUX-SUB-O
B05f	I2S-BCLK
B06c	I2S-BCLK
B05e	I2S-BCLK-A
B05f	I2S-BCLK-A
B05f	I2S-BCLK-EL
B04e	I2S-BCLK-M
B05f	I2S-BCLK-M
B04e	I2S-CLK
B05f	I2S-HEADPH-EL
B05f	I2S-MAIN-D
B06c	I2S-MAIN-D
B05e	I2S-MAIN-D-A
B05f	I2S-MAIN-D-A
B04e	I2S-MAIN-D-M
B05f	I2S-MAIN-D-M
B05f	I2S-MAIN-ND
B06c	I2S-MAIN-ND
B04e	I2S-MAIN-ND-B
B05f	I2S-MCH-CSW
B06c	I2S-MCH-CSW
B05e	I2S-MCH-CSW-AI
B05f	I2S-MCH-CSW-AI
B05e	I2S-MCH-CSW-AO
B05f	I2S-MCH-CSW-AO
B04e	I2S-MCH-CSW-BO
B04e	I2S-MCH-CSW-EL
B04e	I2S-MCH-CSW-OA
B05f	I2S-MCH-CSW-OA
B05f	I2S-MCH-LR
B06c	I2S-MCH-LR
B05e	I2S-MCH-LR-AI
B05f	I2S-MCH-LR-AI
B05e	I2S-MCH-LR-AO
B05f	I2S-MCH-LR-AO
B04e	I2S-MCH-LR-BO
B04e	I2S-MCH-LR-EL
B04e	I2S-MCH-LR-OA
B05f	I2S-MCH-LR-OA
B05f	I2S-MCH-SLR
B06c	I2S-MCH-SLR
B05e	I2S-MCH-SLR-AI
B05f	I2S-MCH-SLR-AI
B05e	I2S-MCH-SLR-AO
B05f	I2S-MCH-SLR-AO
B04e	I2S-MCH-SLR-BO
B04e	I2S-MCH-SLR-EL
B04e	I2S-MCH-SLR-OA
B05f	I2S-MCH-SLR-OA
B05f	I2S-SUB-D
B06c	I2S-SUB-D
B05e	I2S-SUB-D-A
B05f	I2S-SUB-D-A
B04e	I2S-SUB-D-M
B05f	I2S-SUB-D-M
B05f	I2S-SUB-ND
B06c	I2S-SUB-ND
B05e	I2S-SUB-ND-A
B05f	I2S-SUB-ND-A
B05f	I2S-WS
B06c	I2S-WS
B05e	I2S-WS-A
B05f	I2S-WS-A
B05f	I2S-WS-EL
B04e	I2S-WS-M
B05f	I2S-WS-M
B03	IF-TER1
B05c	IF-TER1
B03	IF-TER2
B04c	IF-TER2
B11e	IN-5V
B11b	IN-CENTER
B11b	IO-EXP-1
B11c	IO-EXP-1
B11b	IO-EXP-2
B11c	IO-EXP-2
B11b	IO-EXP-3
B11c	IO-EXP-3
B11b	IO-EXP-4
B11c	IO-EXP-4
B11b	IO-EXP-7
B11d	IO-EXP-7
B04d	IRQ-AVIP
B06a	IRQ-AVIP
B05d	IRQ-AVIP-SUB
B06a	IRQ-AVIP-SUB
B06a	IRQ-DOP_LCD-PWR-ON
B09a	IRQ-DOP_LCD-PWR-ON
B09b	IRQ-DOP_LCD-PWR-ON
B09d	IRQ-DOP_LCD-PWR-ON
B06a	IRQ-ETHERNET
B12	IRQ-ETHERNET
B06a	IRQ-HD1
B11a	IRQ-HD1
B06a	IRQ-HD2
B11a	IRQ-HD2
B06a	IRQ-HIRATE
B11e	IRQ-HIRATE
B06a	IRQ-IEEE1394
B06a	IRQ-MAIN
B04b	IRQ-MPIF
B06a	IRQ-MPIF
B05b	IRQ-MPIF-SUB
B06a	IRQ-MPIF-SUB
B06a	IRQ-POD
B06a	IRQ-SPIDER
B08	IRQ-SPIDER
B06a	IRQ-SUB
B06a	IRQ-USB20
B04e	JTAG-TCK
B04f	JTAG-TCK
B05e	JTAG-TCK
B06a	JTAG-TCK
B06e	JTAG-TCK
B09a	JTAG-TCK
B11c	JTAG-TD-ANAIO-DIGIO
B12	JTAG-TD-ANAIO-DIGIO
B05e	JTAG-TD-AVIP1-CONN
B06e	JTAG-TD-AVIP1-CONN
B07a	JTAG-TD-AVIP1-CONN
B04e	JTAG-TD-AVIP2-COLUMBUS2
B04f	JTAG-TD-AVIP2-COLUMBUS2
B04f	JTAG-TD-COL2-MOP
B09a	JTAG-TD-COL2-MOP
B06a	JTAG-TD-CONN-VIPER
B06e	JTAG-TD-CONN-VIPER
B07a	JTAG-TD-CONN-VIPER
B04e	JTAG-TD-DVB-AVIP2
B12	JTAG-TD-DVB-AVIP2
B05e	JTAG-TD-MOP-AVIP1
B09a	JTAG-TD-MOP-AVIP1
B08	JTAG-TD-SPIDER-ANAIO
B11c	JTAG-TD-SPIDER-ANAIO
B06a	JTAG-TD-VIPER-SPIDER
B08	JTAG-TD-VIPER-SPIDER
B04e	JTAG-TMS
B04f	JTAG-TMS
B05e	JTAG-TMS
B06a	JTAG-TMS
B06e	JTAG-TMS
B09a	JTAG-TMS
B04e	JTAG-TRST
B04f	JTAG-TRST
B05e	JTAG-TRST
B06a	JTAG-TRST
B06e	JTAG-TRST
B09a	JTAG-TRST
B07a	KEYBOARD
B10	KEYBOARD
B07a	LAMP-ON
B10	LAMP-ON
B09a	LCD-PWR-ON
B09b	LCD-PWR-ON
B09d	LCD-PWR-ON
B07a	LED1
B10	LED1
B07a	LED2
B10	LED2
B07a	LIGHT-SENSOR
B10	LIGHT-SENSOR
B09a	LV-BOUT-0
B09b	LV-BOUT-0
B09d	LV-BOUT-0
B09e	LV-BOUT-0
B09a	LV-BOUT-1
B09b	LV-BOUT-1
B09d	LV-BOUT-1
B09e	LV-BOUT-1
B09a	LV-BOUT-2
B09b	LV-BOUT-2
B09d	LV-BOUT-2
B09e	LV-BOUT-2
B09a	LV-BOUT-3
B09b	LV-BOUT-3
B09d	LV-BOUT-3
B09e	LV-BOUT-3
B09a	LV-BOUT-4
B09b	LV-BOUT-4
B09d	LV-BOUT-4
B09e	LV-BOUT-4
B09a	LV-BOUT-5
B09b	LV-BOUT-5
B09d	LV-BOUT-5
B09e	LV-BOUT-5
B09a	LV-BOUT-6
B09b	LV-BOUT-6
B09d	LV-BOUT-6
B09e	LV-BOUT-6
B09a	LV-BOUT-7
B09b	LV-BOUT-7
B09d	LV-BOUT-7
B09e	LV-BOUT-7
B09a	LV-CLKIN
B09b	LV-CLKIN
B09d	LV-CLKIN
B09e	LV-CLKIN
B09d	LVDSA-
B13	LVDSA-
B09d	LVDSA+
B13	LVDSA+
B09d	LVDSB-
B13	LVDSB-
B09d	LVDSB+
B13	LVDSB+
B09d	LVDSC-
B13	LVDSC-
B09d	LVDSC+
B13	LVDSC+
B09d	LVDSCLK-
B13	LVDSCLK-
B09d	LVDSCLK+
B13	LVDSCLK+
B09d	LVDSD-
B13	LVDSD-
B09d	LVDSD+
B13	LVDSD+
B05a	LVDSE-
B05b	LVDSE-
B05c	LVDSE-
B05d	LVDSE-
B05e	LVDSE-
B05g	LVDSE-
B09a	LVDSE-
B09b	LVDSE-
B09c	LVDSE-
B09d	LVDSE-
B09e	LVDSE-
B09f	LVDSE-
B13	LVDSE-
B05a	LVDSE+
B05b	LVDSE+
B05c	LVDSE+
B05d	LVDSE+
B05e	LVDSE+
B05g	LVDSE+
B09a	LVDSE+
B09b	LVDSE+
B09c	LVDSE+
B09d	LVDSE+
B09e	LVDSE+
B09f	LVDSE+
B13	LVDSE+
B09a	LV-GOUT-0
B09b	LV-GOUT-0
B09d	LV-GOUT-0
B09e	LV-GOUT-0
B09a	LV-GOUT-1
B09b	LV-GOUT-1
B09d	LV-GOUT-1
B09e	LV-GOUT-1
B09a	LV-GOUT-2
B09b	LV-GOUT-2
B09d	LV-GOUT-2
B09e	LV-GOUT-2
B09a	LV-GOUT-3
B09b	LV-GOUT-3
B09d	LV-GOUT-3
B09e	LV-GOUT-3
B09a	LV-GOUT-4
B09b	LV-GOUT-4
B09d	LV-GOUT-4
B09e	LV-GOUT-4
B09a	LV-GOUT-5
B09b	LV-GOUT-5
B09d	LV-GOUT-5
B09e	LV-GOUT-5
B09a	LV-GOUT-6
B09b	LV-GOUT-6
B09d	LV-GOUT-6
B09e	LV-GOUT-6
B09a	LV-GOUT-7
B09b	LV-GOUT-7
B09d	LV-GOUT-7
B09e	LV-GOUT-7
B09a	LV-OUT-DE
B09b	LV-OUT-DE
B09d	LV-OUT-DE
B09e	LV-OUT-DE
B09a	LV-OUT-FFIELD
B09b	LV-OUT-FFIELD
B09d	LV-OUT-FFIELD
B09a	LV-OUT-HS
B09b	LV-OUT-HS
B09d	LV-OUT-HS
B09e	LV-OUT-HS
B09a	LV-OUT-VS
B09b	LV-OUT-VS
B09d	LV-OUT-VS
B09e	LV-OUT-VS
B09a	LV-ROUT-0
B09b	LV-ROUT-0
B09d	LV-ROUT-0
B09e	LV-ROUT-0
B09a	LV-ROUT-1
B09b	LV-ROUT-1
B09d	LV-ROUT-1
B09e	LV-ROUT-1
B09a	LV-ROUT-2
B09b	LV-ROUT-2
B09d	LV-ROUT-2
B09e	LV-ROUT-2
B09a	LV-ROUT-3
B09b	LV-ROUT-3
B09d	LV-ROUT-3
B09e	LV-ROUT-3
B09a	LV-ROUT-4
B09b	LV-ROUT-4
B09d	LV-ROUT-4
B09e	LV-ROUT-4
B09a	LV-ROUT-5
B09b	LV-ROUT-5
B09d	LV-ROUT-5
B09e	LV-ROUT-5
B09a	LV-ROUT-6
B09b	LV-ROUT-6
B09d	LV-ROUT-6
B09e	LV-ROUT-6
B09a	LV-ROUT-7
B09b	LV-ROUT-7
B09d	LV-ROUT-7
B09e	LV-ROUT-7
B04d	M135-CLK
B05d	M135-CLK
B06a	M135-CLK
B06a	M27-CLK
B09a	M27-CLK
B06b	MM_A0
B06b	MM_A1
B06b	MM_A10
B06b	MM_A11
B06b	MM_A12
B06b	MM_A2
B06b	MM_A3
B06b	MM_A4
B06b	MM_A5
B06b	MM_A6
B06b	MM_A7
B06b	MM_A8
B06b	MM_A9
B06b	MM_BA0
B06b	MM_BA1
B06b	MM_CAS
B06b	MM_CKE
B06b	MM_CLK_N
B06b	MM_CLK_P
B06b	MM_CS0
B06b	MM_DATA_0
B06b	MM_DATA_1
B06b	MM_DATA_10
B06b	MM_DATA_11
B06b	MM_DATA_12
B06b	MM_DATA_13
B06b	MM_DATA_14
B06b	MM_DATA_15
B06b	MM_DATA_16
B06b	MM_DATA_17
B06b	MM_DATA_18
B06b	MM_DATA_19
B06b	MM_DATA_2
B06b	MM_DATA_20
B06b	MM_DATA_21
B06b	MM_DATA_22
B06b	MM_DATA_23
B06b	MM_DATA_24
B06b	MM_DATA_25
B06b	MM_DATA_26
B06b	MM_DATA_27
B06b	MM_DATA_28
B06b	MM_DATA_29
B06b	MM_DATA_3
B06b	MM_DATA_30
B06b	MM_DATA_31
B06b	MM_DATA_4
B06b	MM_DATA_5
B06b	MM_DATA_6
B06b	MM_DATA_7
B06b	MM_DATA_8
B06b	MM_DATA_9
B06b	MM_DQM_0
B06b	MM_DQM_1
B06b	MM_DQM_2
B06b	MM_DQM_3
B06b	MM_DQS0
B06b	MM_DQS1
B06b	MM_DQS2
B06b	MM_DQS3
B06b	MM_RAS
B06b	MM_WE
B07a	NA1
B07a	NA3
B07a	NA4
B07a	NA5
B07b	NAND_ALE
B07b	NAND_CLE
B07b	NAND_RE_N
B07b	NAND_WE_N
B07b	NAND-AD(0)
B07b	NAND-AD(1)
B07b	NAND-AD(2)
B07b	NAND-AD(3)
B07b	NAND-AD(4)
B07b	NAND-AD(5)
B07b	NAND-AD(6)
B07b	NAND-AD(7)
B07b	NAND-D(10)
B07b	NAND-D(11)
B07b	NAND-D(12)
B07b	NAND-D(13)
B07b	NAND-D(14)
B07b	NAND-D(15)
B07b	NAND-D(8)
B07b	NAND-D(9)
B11e	OVCC
B07a	P50
B11d	P50
B07a	P50-HDMI
B11e	P50-HDMI
B06a	PCI-AD0
B07b	PCI-AD0
B11a	PCI-AD0
B12	PCI-AD0
B06a	PCI-AD1
B07b	PCI-AD1
B11a	PCI-AD1
B12	PCI-AD1
B06a	PCI-AD10
B11a	PCI-AD10
B12	PCI-AD10
B06a	PCI-AD11
B11a	PCI-AD11
B12	PCI-AD11
B06a	PCI-AD12
B11a	PCI-AD12
B12	PCI-AD12
B06a	PCI-AD13
B11a	PCI-AD13
B12	PCI-AD13
B06a	PCI-AD14
B11a	PCI-AD14
B12	PCI-AD14
B06a	PCI-AD15
B11a	PCI-AD15
B12	PCI-AD15
B06a	PCI-AD16
B07b	PCI-AD16
B11a	PCI-AD16
B12	PCI-AD16
B06a	PCI-AD17
B07b	PCI-AD17
B11a	PCI-AD17
B12	PCI-AD17
B06a	PCI-AD18
B07b	PCI-AD18
B11a	PCI-AD18
B12	PCI-AD18
B06a	PCI-AD19
B07b	PCI-AD19
B11a	PCI-AD19
B12	PCI-AD19
B06a	PCI-AD2
B11a	PCI-AD2
B12	PCI-AD2
B06a	PCI-AD20
B07b	PCI-AD20
B11a	PCI-AD20
B12	PCI-AD20
B06a	PCI-AD21
B07b	PCI-AD21
B11a	PCI-AD21
B12	PCI-AD21
B06a	PCI-AD22
B07b	PCI-AD22
B11a	PCI-AD22
B12	PCI-AD22
B06a	PCI-AD23
B07b	PCI-AD23
B11a	PCI-AD23
B12	PCI-AD23
B06a	PCI-AD24
B07b	PCI-AD24
B11a	PCI-AD24
B12	PCI-AD24
B06a	PCI-AD25
B07b	PCI-AD25
B11a	PCI-AD25
B12	PCI-AD25
B06a	PCI-AD26
B07b	PCI-AD26
B11a	PCI-AD26
B12	PCI-AD26
B06a	PCI-AD27
B07b	PCI-AD27
B11a	PCI-AD27
B12	PCI-AD27
B06a	PCI-AD28
B07b	PCI-AD28
B11a	PCI-AD28
B12	PCI-AD28
B06a	PCI-AD29
B07b	PCI-AD29
B11a	PCI-AD29
B12	PCI-AD29
B06a	PCI-AD3
B11a	PCI-AD3
B12	PCI-AD3
B06a	PCI-AD30
B07b	PCI-AD30
B11a	PCI-AD30
B12	PCI-AD30
B06a	PCI-AD31
B07b	PCI-AD31
B11a	PCI-AD31
B12	PCI-AD31
B06a	PCI-AD4
B11a	PCI-AD4
B12	PCI-AD4
B06a	PCI-AD5
B11a	PCI-AD5
B12	PCI-AD5
B06a	PCI-AD6
B11a	PCI-AD6
B12	PCI-AD6
B06a	PCI-AD7
B11a	PCI-AD7
B12	PCI-AD7
B06a	PCI-AD8
B11a	PCI-AD8
B12	PCI-AD8
B06a	PCI-AD9
B11a	PCI-AD9
B12	PCI-AD9
B06a	PCI-CBE0
B11a	PCI-CBE0
B12	PCI-CBE0
B06a	PCI-CBE1
B07b	PCI-CBE1
B11a	PCI-CBE1
B12	PCI-CBE1
B06a	PCI-CBE2
B07b	PCI-CBE2
B11a	PCI-CBE2
B12	PCI-CBE2
B06a	PCI-CBE3
B11a	PCI-CBE3
B12	PCI-CBE3
B07b	PCI-CLK-ETHERNET
B12	PCI-CLK-ETHERNET
B07b	PCI-CLK-IEEE1394
B07b	PCI-CLK-SLOT
B11a	PCI-CLK-SLOT
B07b	PCI-CLK-USB20
B06a	PCI-CLK-VPR
B07b	PCI-CLK-VPR
B06a	PCI-DEVSEL
B07b	PCI-DEVSEL
B11a	PCI-DEVSEL
B12	PCI-DEVSEL
B06a	PCI-FRAME
B07b	PCI-FRAME
B11a	PCI-FRAME
B12	PCI-FRAME
B06a	PCI-GNT
B11a	PCI-GNT
B06a	PCI-GNT-A
B11a	PCI-GNT-A
B12	PCI-GNT-A
B06a	PCI-GNT-B
B11a	PCI-GNT-B
B06a	PCI-INTA
B11a	PCI-INTA
B06a	PCI-IRDY
B07b	PCI-IRDY
B11a	PCI-IRDY
B12	PCI-IRDY
B06a	PCI-PAR
B11a	PCI-PAR
B12	PCI-PAR
B06a	PCI-PERR
B07b	PCI-PERR
B11a	PCI-PERR
B12	PCI-PERR
B06a	PCI-REQ
B11a	PCI-REQ
B06a	PCI-REQ-A
B11a	PCI-REQ-A
B12	PCI-REQ-A
B06a	PCI-REQ-B
B11a	PCI-REQ-B
B06a	PCI-SERR
B07b	PCI-SERR
B11a	PCI-SERR
B12	PCI-SERR
B06a	PCI-STOP
B07b	PCI-STOP
B11a	PCI-STOP
B12	PCI-STOP
B06a	PCI-TRDY
B07b	PCI-TRDY
B11a	PCI-TRDY
B12	PCI-TRDY
B09a	PD-EPLD
B09a	PD-LVDS
B09b	PD-LVDS
B09c	PD-LVDS
B09d	PD-LVDS
B09e	PD-LVDS
B06c	PD-LVDS-VIPER
B09b	PD-LVDS-VIPER
B09d	PD-LVDS-VIPER
B09e	PD-TMDS
B06a	PLL-OUT
B07b	PLL-OUT
B06a	POR
B07a	POR
B10	POR
B06a	POWERDOWN-1394
B09b	POWER-OK
B09f	PROT_DC
B07a	PROT-AUDIOSUPPLY
B10	PROT-AUDIOSUPPLY
B01	PROT-DC
B07a	PROX-PWM
B11e	PVCC2-SI
B07a	PWR-OK-PDP
B10	PWR-OK-PDP
B07a	RC
B10	RC
B09c	R-CRT
B09e	R-CRT
B06a	REGIMBEAU
B11d	REGIMBEAU
B06a	RESET-1394
B07a	RESET-AUDIO
B07c	RESET-AUDIO
B06a	RESET-ETHERNET
B12	RESET-ETHERNET
B06a	RESET-FE-MAIN
B06a	RESET-FE-SUB
B04d	RESET-MIPS
B04f	RESET-MIPS
B05d	RESET-MIPS
B06a	RESET-MIPS
B07a	RESET-MIPS
B11e	RESET-MIPS
B06a	RESET-POD-CI
B06a	RESET-SYSTEM
B06e	RESET-SYSTEM
B07a	RESET-SYSTEM
B11a	RESET-SYSTEM
B06a	RESET-TM
B08	RESET-TM
B07a	RESET-UP-IN
B06a	RESET-USB20
B06a	RTSN-VIPER
B07a	RTSN-VIPER
B11e	RX0-
B11e	RX0+
B11e	RX1-
B11e	RX1+
B11e	RX2-
B11e	RX2+
B11e	RXC-
B11e	RXC+
B07a	RXD
B08	RXD
B11a	RXD
B11e	RX-DDC-SCL
B11e	RX-DDC-SDA
B07a	RXD-UP
B06a	RXD-VIPER
B07a	RXD-VIPER
B11b	RX-HOTPLUG
B11e	RX-HOTPLUG
B07a	SAM
B06a	SCL-DMA
B06e	SCL-DMA
B07a	SCL-DMA
B07a	SCL-DMA-BUS1
B08	SCL-DMA-BUS1
B09a	SCL-DMA-BUS1
B09b	SCL-DMA-BUS1
B09d	SCL-DMA-BUS1
B09d	SCL-DMA-BUS1-DISP
B13	SCL-DMA-BUS1-DISP
B04b	SCL-DMA-BUS2
B04d	SCL-DMA-BUS2
B04f	SCL-DMA-BUS2
B05b	SCL-DMA-BUS2
B05d	SCL-DMA-BUS2
B07a	SCL-DMA-BUS2
B06a	SCL-I2C4
B06e	SCL-I2C4
B06a	SCL-MM
B06e	SCL-MM
B07a	SCL-MM
B07a	SCL-MM-BUS1
B11e	SCL-MM-BUS1
B03	SCL-MM-BUS2
B07a	SCL-MM-BUS2
B10	SCL-MM-BUS2
B11b	SCL-MM-BUS2
B11d	SCL-MM-BUS2
B03	SCL-SUB
B06a	SCL-UP-VIP
B06e	SCL-UP-VIP
B07a	SCL-UP-VIP
B04b	SDAC-VDDD
B04e	SDAC-VDDD
B05b	SDAC-VDDD
B05e	SDAC-VDDD
B06a	SDA-DMA
B06e	SDA-DMA
B07a	SDA-DMA
B07a	SDA-DMA-BUS1
B08	SDA-DMA-BUS1
B09a	SDA-DMA-BUS1
B09b	SDA-DMA-BUS1
B09d	SDA-DMA-BUS1
B09d	SDA-DMA-BUS1-DISP
B13	SDA-DMA-BUS1-DISP
B04b	SDA-DMA-BUS2
B04d	SDA-DMA-BUS2
B04f	SDA-DMA-BUS2
B05b	SDA-DMA-BUS2
B05d	SDA-DMA-BUS2
B07a	SDA-DMA-BUS2
B06a	SDA-I2C4
B06e	SDA-I2C4
B06a	SDA-MM
B06e	SDA-MM
B07a	SDA-MM
B07a	SDA-MM-BUS1
B11e	SDA-MM-BUS1
B03	SDA-MM-BUS2
B07a	SDA-MM-BUS2
B10	SDA-MM-BUS2
B11b	SDA-MM-BUS2
B11d	SDA-MM-BUS2
B03	SDA-SUB
B06a	SDA-UP-VIP
B06e	SDA-UP-VIP
B07a	SDA-UP-VIP
B07a	SDM
B06a	SEL-DV1F
B06a	SEL-DV3F
B05c	SEL-IF-LL1
B06a	SEL-IF-LL1
B04c	SEL-IF-LL2
B06a	SEL-IF-LL2
B06a	SOUND-ENABLE
B10	SOUND-ENABLE
B06a	SOUND-ENABLE-VPR
B11c	SPDIF-HDMI
B11e	SPDIF-HDMI
B06c	SPDIF-IN1
B11c	SPDIF-IN1
B06c	SPDIF-IN2
B11c	SPDIF-IN2
B11c	SPDIF-OPT-IN
B11d	SPDIF-OPT-IN
B06c	SPDIF-OUT1
B11c	SPDIF-OUT1
B11d	SPDIF-OUT1
B11c	SPDIF-SEL-OUT1
B11c	SPDIF-SEL-OUT2
B11b	SPI-1
B11c	SPI-1
B11d	SPI-1
B11b	SPI-2
B11c	SPI-2
B11b	SPI-OUT
B11c	SPI-OUT
B07a	STANDBY
B10	STANDBY
B07a	STBY-WP-NANDFLASH
B07b	STBY-WP-NANDFLASH
B04a	STROBE1N
B04d	STROBE1N
B05a	STROBE1N
B05d	STROBE1N
B04a	STROBE1P
B04d	STROBE1P
B05a	STROBE1P
B05d	STROBE1P
B04a	STROBE2N
B04d	STROBE2N
B05a	STROBE2N
B05d	STROBE2N
B04a	STROBE2P
B04d	STROBE2P
B05a	STROBE2P
B05d	STROBE2P
B04a	STROBE3N
B04d	STROBE3N
B05a	STROBE3N
B05d	STROBE3N
B04a	STROBE3P
B04d	STROBE3P
B05a	STROBE3P
B05d	STROBE3P
B01	SUPPLY-FAULT
B07a	SUPPLY-FAULT
B09f	SUPPLY-FAULT
B07a	TEMP-SENSOR
B10	TEMP-SENSOR
B06c	TS-CLK
B06c	TS-DATA0
B06c	TS-DATA1
B06c	TS-DATA2
B06c	TS-DATA3
B06c	TS-DATA4
B06c	TS-DATA5
B06c	TS-DATA6
B06c	TS-DATA7
B06c	TS-SOP
B06c	TS-VALID
B06c	TUN-VIPER-AVREF
B08	TUN-VIPER-AVREF
B06c	TUN-VIPER-RX-BUSY
B08	TUN-VIPER-RX-BUSY
B06c	TUN-VIPER-RX-CLKP
B08	TUN-VIPER-RX-CLKP
B06c	TUN-VIPER-RX-DATA0
B08	TUN-VIPER-RX-DATA0
B06c	TUN-VIPER-RX-DATA1
B08	TUN-VIPER-RX-DATA1
B06c	TUN-VIPER-RX-DATA10
B08	TUN-VIPER-RX-DATA10
B06c	TUN-VIPER-RX-DATA11
B08	TUN-VIPER-RX-DATA11
B06c	TUN-VIPER-RX-DATA12
B08	TUN-VIPER-RX-DATA12
B06c	TUN-VIPER-RX-DATA13
B08	TUN-VIPER-RX-DATA13
B06c	TUN-VIPER-RX-DATA14
B08	TUN-VIPER-RX-DATA14
B06c	TUN-VIPER-RX-DATA15
B08	TUN-VIPER-RX-DATA15
B06c	TUN-VIPER-RX-DATA2
B08	TUN-VIPER-RX-DATA2
B06c	TUN-VIPER-RX-DATA3
B08	TUN-VIPER-RX-DATA3
B06c	TUN-VIPER-RX-DATA4
B08	TUN-VIPER-RX-DATA4
B06c	TUN-VIPER-RX-DATA5
B08	TUN-VIPER-RX-DATA5
B06c	TUN-VIPER-RX-DATA6
B08	TUN-VIPER-RX-DATA6
B06c	TUN-VIPER-RX-DATA7
B08	TUN-VIPER-RX-DATA7
B06c	TUN-VIPER-RX-DATA8
B08	TUN-VIPER-RX-DATA8
B06c	TUN-VIPER-RX-DATA9
B08	TUN-VIPER-RX-DATA9
B06c	TUN-VIPER-TX-BUSY
B08	TUN-VIPER-TX-BUSY
B06c	TUN-VIPER-TX-CLKN
B08	TUN-VIPER-TX-CLKN
B06c	TUN-VIPER-TX-CLKP
B08	TUN-VIPER-TX-CLKP
B06c	TUN-VIPER-TX-DATA0
B08	TUN-VIPER-TX-DATA0
B06c	TUN-VIPER-TX-DATA1
B08	TUN-VIPER-TX-DATA1
B06c	TUN-VIPER-TX-DATA10
B08	TUN-VIPER-TX-DATA10
B06c	TUN-VIPER-TX-DATA11
B08	TUN-VIPER-TX-DATA11
B06c	TUN-VIPER-TX-DATA12
B08	TUN-VIPER-TX-DATA12
B06c	TUN-VIPER-TX-DATA13
B08	TUN-VIPER-TX-DATA13
B06c	TUN-VIPER-TX-DATA14
B08	TUN-VIPER-TX-DATA14
B06c	TUN-VIPER-TX-DATA15
B08	TUN-VIPER-TX-DATA15
B06c	TUN-VIPER-TX-DATA2
B08	TUN-VIPER-TX-DATA2
B06c	TUN-VIPER-TX-DATA3
B08	TUN-VIPER-TX-DATA3
B06c	TUN-VIPER-TX-DATA4
B08	TUN-VIPER-TX-DATA4
B06c	TUN-VIPER-TX-DATA5
B08	TUN-VIPER-TX-DATA5
B06c	TUN-VIPER-TX-DATA6
B08	TUN-VIPER-TX-DATA6
B06c	TUN-VIPER-TX-DATA7
B08	TUN-VIPER-TX-DATA7
B06c	TUN-VIPER-TX-DATA8
B08	TUN-VIPER-TX-DATA8
B06c	TUN-VIPER-TX-DATA9
B08	TUN-VIPER-TX-DATA9
B07a	TXD
B08	TXD
B11a	TXD
B07a	TXD-UP
B06a	TXD-VIPER
B07a	TXD-VIPER
B06a	UART1-RXD
B08	UART1-RXD
B06a	UART1-TXD
B08	UART1-TXD
B07a	UART-SWITCH
B07a	UART-SWITCHn
B06a	USB06a-DM
B06a	USB06a-DP
B06a	USB06b-DM
B06a	USB06b-DP
B06a	USB-BUS-PW
B06a	USB-OVERCUR
B04f	VDD-COL-MEM2
B09d	VDISP
B13	VDISP
B09d	VDISP2
B13	VDISP2
B01	V-HI-LINK
B03	VISUAL-CHECK
B04c	VISUAL-CHECK
B04b	VREF-AUD-POS
B06b	VREF-DDR
B08	VREF-DDR
B08	VREFS
B06a	VSYNC-HIRATE
B11e	VSYNC-HIRATE
B08	VTT
B06b	VTT-TERM-DDR
B06a	XIO-A25
B06a	XIO-ACK
B07b	XIO-ACK
B06a	XIO-D10
B06a	XIO-D11
B06a	XIO-D12
B06a	XIO-D13
B06a	XIO-D14
B06a	XIO-D15
B06a	XIO-D8
B06a	XIO-D9
B06a	XIO-SEL0
B07b	XIO-SEL0
B06a	XIO-SEL1
B06a	XIO-SEL2
B06a	XIO-SEL3
B06a	XIO-SEL4
B07b	Y-CVBS-MON-OUT
B11d	Y-CVBS-MON-OUT

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Lay◂out Small Signal Board (Overview Top Side)

1A33	B5
1A51	C5
1A52	C5
1A53	C5
1A55	B5
1C33	B3
1C51	C2
1C52	C2
1C53	C3
1C55	C3
1D00	E3
1E00	A5
1E10	A7
1E11	A6
1E12	A6
1E13	A6
1E35	A9
1E55	B8
1E60	B9
1E61	B9
1E65	A6
1G03	F3
1G05	E4
1G21	F3
1G22	F3
1G23	F3
1G24	F3
1H00	F7
1H01	F5
1H03	F7
1H04	F7
1H05	F7
1K00	B3
1M01	D9
1M03	E9
1M15	A9
1M17	F8
1M20	D9
1M36	C9
1M46	F8
1M52	F2
1O00	A4
1O10	A4
1R00	E8
1T02	A2
1T03	A2
1U01	D8
1U04	D8
1Y00	B5
2A04	C5
2A07	B4
2A09	C4
2A21	C5
2A22	C5
2A23	C5
2A24	B4
2A25	C5
2A27	C5
2A31	C4
2A34	B5
2A35	C5
2A36	C5
2A38	B6
2A39	C5
2A50	C4
2A52	B5
2A56	C5
2A57	C4
2A65	C4
2A66	C5
2A68	C4
2A70	B5
2A72	B5
2A73	B5
2A75	B5
2A76	C4
2A77	C4
2A79	C4
2C04	C3
2C10	C2
2C11	B3
2C14	B3
2C21	D3
2C22	C3
2C23	C3
2C24	B2
2C27	C3
2C29	C3
2C31	B3
2C32	B3
2C33	B4
2C34	B3
2C35	C3
2C36	C3
2C38	B4
2C39	B3
2C40	C3
2C45	C3
2C50	C2
2C52	B2
2C57	C2
2C63	C2
2C65	C2
2C68	C2
2C70	B3
2C72	B3
2C73	B3
2C75	B2
2C76	B2
2C77	B2
2C79	C2
2D06	E4
2D07	E4
2D08	E4
2D10	E3
2D19	E4
2D26	F4
2D33	E3
2D34	E3
2D37	E3
2D38	E3
2D42	E3
2D43	E3
2D48	F3
2E00	A9
2E01	A9
2E02	A9
2E03	A9
2E04	A9
2E05	A9
2E06	A9
2E07	B9
2E09	B9
2E12	B9
2E23	A6
2E29	A6
2E31	A7
2E35	A6
2E36	A6
2E39	A6
2E42	A7
2E43	A7
2E44	A6
2E48	A6
2E53	B9
2E54	A9
2E56	A9
2E58	A9
2E60	A9
2E62	A9
2E64	A9
2E66	A9
2E68	A9
2E70	A9
2E72	A9
2E74	A9
2E76	A9
2E78	A9
2E80	A9
2E81	B9
2E85	B9
2E87	B9
2E89	B9
2E90	A9
2E91	B9
2E92	A9
2E93	A9
2E94	A9
2E95	A9
2E96	A9
2E97	A9
2E98	A9
2E99	A9
2F11	B7
2F17	B7
2F18	B7
2F20	B7
2F25	C6
2G01	E5
2G02	E5
2G03	D5
2G04	D5
2G05	E5
2G06	E5
2G07	E5
2G08	E5
2G09	E6
2G10	E6
2G11	D5
2G12	D5
2G13	E5
2G14	E4
2G15	E5
2G16	E5
2G17	D5
2G18	E6
2G19	E5
2G21	F5
2G22	E5
2G24	F5
2G29	F5
2G30	F5
2G32	E5
2G33	E4
2G37	F4
2G40	F5
2G41	F5
2G42	F5
2G43	F5
2G44	F5
2G45	F5
2G46	F5
2G47	F5
2G48	F5
2G49	F5
2G50	E5
2G52	E5
2G54	E5
2G55	F5
2G57	E4
2G58	E5
2G67	E5
2G69	E5
2G71	E4
2G72	E4
2G73	E6
2G74	E4
2G75	E4
2G76	F4
2G77	F4
2G79	E4
2G80	E4
2G82	E4
2G83	E5
2G88	F5
2G89	F5
2G90	F4
2H08	F7
2H09	F7
2H15	F8
2H16	F8
2H17	F8
2I02	A8
2I15	A6
2I16	A7
2I22	A7
2I31	A6
2I46	A6
2I47	A6
2I48	A6
2I49	A6
2I58	A8
2I59	A8
2I60	A6
2I71	A9
2I73	A8
2I87	A5
2I89	A5
2I90	A8
2I95	A5
2J00	C4
2J02	C4
2J03	C4
2J07	C3
2J08	C4
2J09	C3
2J12	C4
2J13	C3
2J14	C4
2J17	C4
2J18	C4
2J19	C4
2J26	C4
2J36	C4
2J37	C3
2J38	C4
2J39	C3
2J41	C4
2J42	C4
2J44	C3
2J45	C3
2J46	C3
2J80	D3
2K00	B4
2K01	B3
2K02	C3
2K03	B3
2K04	C3
2K07	C4
2K09	C4
2K12	C3
2K14	C3
2K15	C4
2K17	C3
2K19	C4
2K24	C3
2K25	C3
2K26	C3
2K27	C3
2K28	B3
2K29	B3
2K33	C3
2K34	B3
2K42	D3
2K43	C3
2K46	D2
2K48	D2
2K49	C3
2K50	D2
2K51	C3
2K52	D2
2K53	C3
2K56	C3
2K57	C3
2K58	C3
2K59	C3
2K60	C3
2K61	C3
2K62	C3
2K64	C3
2L26	C6
2M03	E9
2M04	E9
2M06	E9
2M07	F9
2M08	F9
2M09	E9
2M13	D9
2M14	C9
2M15	D9
2M47	D9
2M49	F9
2M59	E9
2M63	C9
2M64	D9
2M67	F9
2M69	F8
2M72	F9
2M73	F9
2M74	F9
2M75	F8
2M76	F8
2M78	F8
2M80	E9
2M81	D9
2M82	E9
2M85	F9
2N20	C7
2N21	C6
2N22	C6
2N23	B7
2N32	C7
2N34	C7
2N35	C7
2N36	C7
2N40	C7
2N41	C7
2N42	C7
2N43	C7
2O00	A4
2O01	A4
2O02	A4
2O03	A4
2O04	A4
2O05	A4
2O06	A4
2O07	A4
2O10	A4
2O11	A4
2O12	A4
2O14	A4
2O15	A4
2O16	A4
2O17	A4
2O18	A4
2O19	A4
2O20	A4
2O21	A4
2O24	A4
2O25	A5
2O26	A5
2R00	E9
2R03	E9
2R14	E8
2R20	F8
2R21	F8
2R22	F8
2R23	F8
2R24	F8
2U37	C7
2U38	D8
2U39	E9
2U59	D8
2U60	C9
2U61	C8
2U62	C9
2U63	C8
2U66	C8
2U67	C9
2U69	D8
2U70	D9
2U73	C9
2U74	C9
2U75	D9
2U76	D9
2U77	D9
2U78	D9
2U79	C8
2U80	D8
2U81	E8
2V00	F6
2V01	F7
2V05	E7
2V16	E6
2V17	E7
2V18	E7
2V19	F7
2V20	F6
2V21	F6
2V22	E7
2V23	E7
2V24	E6
2V25	E6
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2V30	E7
2V31	E6
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2Y19	C6
2Y22	C6
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2Y25	C5
2Y26	C5
2Y27	C5
2Y28	B5
2Y29	B5
2Y31	B5
2Y33	B5
2Y42	C6
2Y49	C5
2Y51	C5
2Y53	C5
2Y56	C5
2Y57	C5
2Y59	C5
2Y62	C5
2Y64	C5
2Y66	C4
3A39	B5
3A40	B5
3A41	C5
3A56	B5
3A57	B5
3A58	B5
3A59	B5
3A60	B5
3A61	B5
3A62	B5
3A63	B5
3A64	B5
3A68	B5
3A69	B5
3A70	C4
3A71	B4
3A72	B4
3A73	B5
3A74	B5
3A75	B4
3A87	C5
3C31	B3
3C32	C3
3C34	C3
3C39	B3
3C40	B3
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3C60	B3
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3C69	B2
3C70	B2
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3C72	B2
3C73	B3
3C74	B3
3C75	B3
3C76	B2
3C84	B2
3C87	C3
3D27	F3
3D31	E3
3E00	A5
3E01	A6
3E02	A6
3E03	A6
3E04	A6
3E05	A6
3E06	A6
3E07	A6
3E08	A6
3E09	A6
3E13	A6
3E20	A7
3E21	A6
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3E23	A6
3E42	A6
3E45	A6
3E46	A7
3E49	A6
3E50	A7
3E53	A5
3E56	A7
3E57	A7
3E58	A7
3E59	A7
3E60	A6
3E62	A9
3E63	A7
3E64	A7
3E65	A7
3E66	A7
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3E68	B6
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3E75	A6
3E79	A9
3E86	A6
3E87	A6
3E88	A9
3E89	A9
3E90	A9
3E91	A9
3E92	B9
3E95	A7
3E96	A6
3E97	B9
3EA0	A6
3EA1	A7
3EA3	A7
3EA4	A7
3EA5	A7
3EA6	A6
3EA7	A6
3EA8	A6
3EA9	A6
3F31	C7
3F47	C7
3F60	B7
3F61	B7
3F64	B7
3F65	B7
3F71	C7
3F92	C7
3G05	E6
3G09	E6
3G15	E4
3G16	E5
3G17	E5
3G18	E4
3G19	F5
3G20	F5
3G22	E4
3G23	E4
3G24	E4
3G25	E5
3G26	E5
3G27	E4
3G28	E4
3G29	E4
3G34	F5
3G42	F4
3G43	F5
3G44	F5
3G50	E4
3G51	E4
3G52	E4
3G53	E6
3G54	E5
3G55	E5
3G56	E5
3G60	E5
3G61	E4
3G62	E4
3G71	F5
3G72	F5
3G73	E4
3G75	F5
3G77	F5
3G78	F5
3H00	E7
3H04	E6
3H05	D6
3H45	F8
3H46	F8
3H47	F8
3H70	D7
3H75	F7
3H82	F7
3H84	D8
3H86	D8
3H88	D8
3H95	D6
3H97	D6
3I58	A8
3J00	C4
3J01	C3
3J02	C4
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3J04	C4
3J05	C3
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3J07	C4
3J08	C3
3J09	C4
3J10	C3
3J11	C4
3J18	C4
3J19	C4
3J20	C4
3J21	C3
3J23	C3
3J24	C3
3J26	B4
3J27	C4
3J28	C4
3J29	C3
3J33	D3
3J48	C4
3J49	C3
3J74	D3
3J85	C3
3J86	C3
3J87	D3
3J88	D3
3J89	D3
3K00	B3
3K01	B3
3K02	C3
3K06	B3
3K09	B3
3K13	B3
3K14	B3
3K15	B3
3K16	B3
3L33	C6
3M03	D9
3M06	E9
3M07	D9
3M08	D9
3M09	E9
3M10	D9
3M12	D9
3M13	D9
3M18	D9
3M19	D9
3M20	C9
3M21	C9
3M23	C9
3M24	E9
3M40	E9
3M41	E9
3M46	E9
3N00	B7
3N04	B7
3N07	B7
3N08	B7
3N09	B7
3N34	B7
3N35	B7
3N36	B7
3N37	B7
3N38	B7
3N39	B7
3N40	C7
3N41	C7
3N47	B7
3N51	C7
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3N61	C7
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3N68	C7
3N69	C7
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3N73	C6
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3N75	C6
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3N77	C6
3N78	C6
3N79	C6
3N80	C6
3O00	A4
3O01	A4
3O02	A4
3O03	A5
3O04	A4
3O05	A4
3O06	A4
3O07	A4
3O08	A4
3O09	A4
3O10	A4
3O21	A4
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3O25	A4
3O26	A4
3O27	A4
3O28	A4
3Q16	E6
3Q20	E6
3Q21	E6
3Q23	E6
3Q31	F7
3Q32	F7
3Q70	F7
3R00	E8
3R01	E8
3R02	E8
3R03	E8
3R04	E8
3R05	E8
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3R07	E8
3R08	E8
3R09	E8
3R10	E8
3R11	E8
3R12	E8
3R13	E8
3R14	E8
3R15	E8
3R16	E8
3R17	E8
3R19	E8
3R21	E8
3R23	E8
3R24	E8
3R38	E8
3R40	F8
3R41	F8
3R42	F8
3R43	F8
3R44	F8
3R45	F8
3R46	F8
3R47	E8
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3U55	D9
3U56	D9
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3V02	E6
3V03	E7
3V04	E6
3V05	E7
3V06	E6
3V07	E7
3V08	E6
3V09	E7
3V10	E6
3V11	E7
3V12	E6
3V13	E7
3V14	E6
3V15	E7
3V16	E6
3V17	E7
3V18	E6
3V19	E7
3V20	E6
3V21	E7
3V22	E6
3V23	E7
3V32	E6
3V33	E7
3V34	E6
3V35	E7
3V36	E6
3V37	E7
3V38	E6
3V39	E7
3V40	E6
3V41	E7
3V42	E6
3V43	E7
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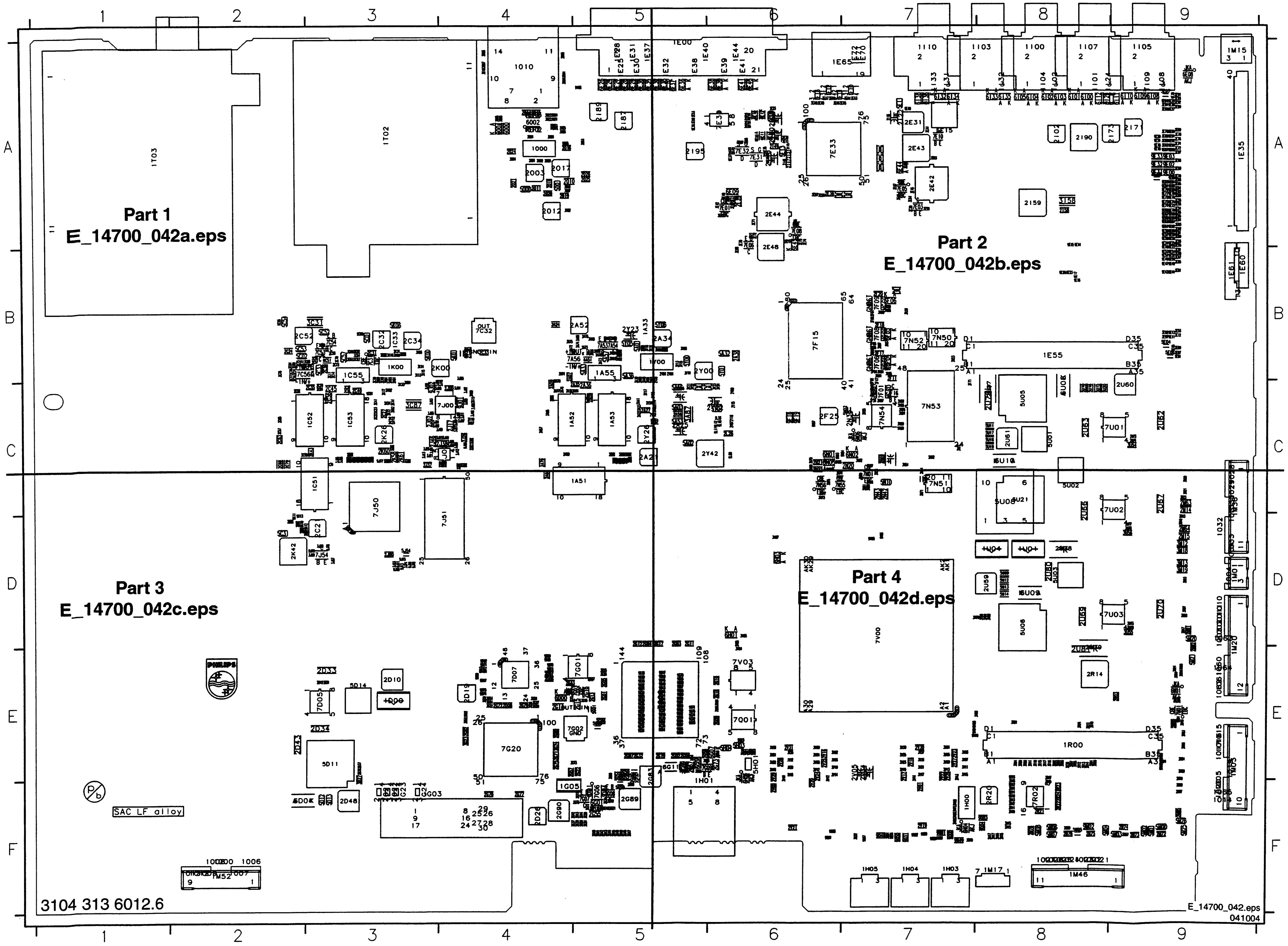
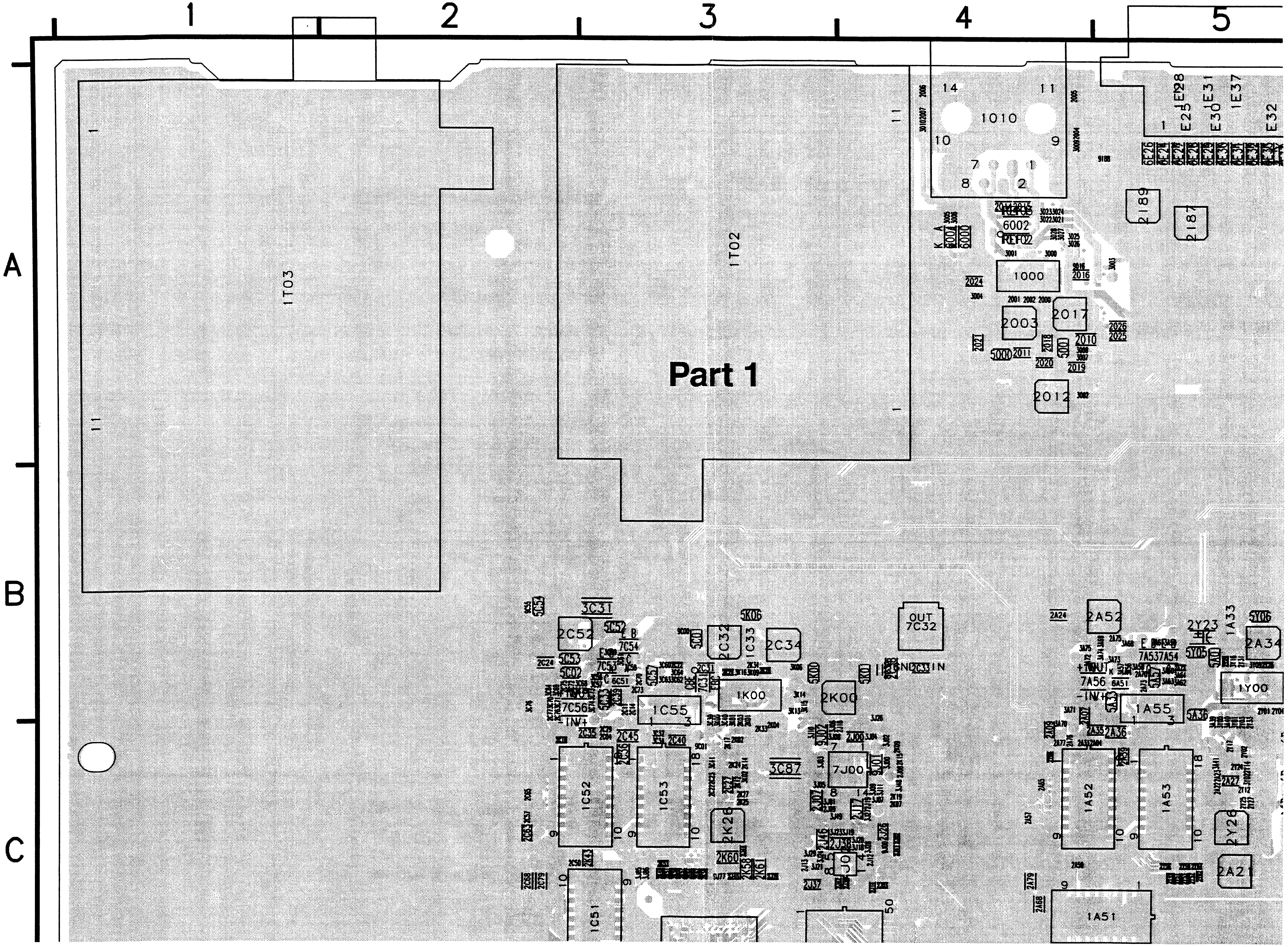
3Y01	B5
3Y02	C5
3Y06	B5
3Y09	B5
3Y13	B5
3Y14	B5
3Y15	B5
3Y16	B5
3Y18	C5
3Y19	C5
3Y21	C5
3Y22	C5
3Y23	C6
3Y24	C6
5A01	B5
5A02	C5
5A03	C5
5A32	B6
5A33	B5
5A36	B5
5A53	C5
5A56	C5
5A57	B5
5C01	B3
5C02	B2
5C31	D2
5C32	B4
5C33	B3
5C52	B3
5C53	B2
5C54	B2
5C57	B3
5D11	F3
5D12	F3
5D13	F3
5D14	E3
5E04	B9
5E05	A9
5E06	B9
5E07	A9
5E09	A6
5E11	A7
5E13	A6
5E15	A7
5G00	E5
5G01	E5
5G50	F5
5G51	E5
5G52	F5
5H01	E6
5H03	E6
5H04	E6
5J54	D3
5K00	B3
5K01	B4
5K06	B3
5M00	F9
5M01	F9
5M02	F9
5M03	F9
5M04	F8
5M05	F8
5M06	F8
5M07	F8
5M08	F8
5M20	D9
5M21	E9
5M25	F9
5M26	F9
5N01	C7
5N02	C7
5N10	C7
5O00	A4
5O01	A4
5U01	C8
5U02	C8
5U03	D8
5U05	C8
5U06	D8
5U08	C8
5U09	D8
5U10	C8
5U11	C8
5U12	D8
5U13	D8
5U14	D8
5U15	C8
5U16	C8
5U17	C8
5U18	C8
5U19	C8
5U20	C8
5U21	C8
5Y00	B5
5Y01	B6
5Y04	C6
5Y05	B5
5Y06	B5
6A51	B5
6C51	B3
6D00	E4
6D04	F2
6E08	A9
6E09	A6
6E10	A6
6E11	A6
6E12	A6
6E13	A6
6E24	A5
6E26	A5
6E27	A5
6E28	A5
6E29	A5
6E30	A5
6E31	A5
6E32	A5
6E33	A5
6E36	A5
6E37	A5
6E38	A5
6E39	A6
6E41	A6
6E43	A6
6E44	A7
6E45	A6
6F04	B7
6F05	B7
6F06	B7
6G01	F5
6G07	E5
6G08	E5
6G11	E5
6H01	D6
6H03	D6
6H04	F7
6H06	E6
6I00	A8
6I01	A8
6I02	A8
6I03	A8
6I04	A8
6I05	A8
6I08	A9
6I09	A9
6I10	A9
6I11	A9
6I12	A8
6I24	A8
6I32	A7
6I33	A8
6I34	A7
6I35	A8
6I36	A7
6I38	A7
6M01	E9
6N01	C6
6N02	C7
6N03	C6
6N06	C7
6O00	A4
6O01	A4
6O02	A4
6U08	C8
6U09	D8
6U10	C8
7A53	B5
7A54	B5
7A56	B4
7C31	B3
7C32	B4
7C53	B3
7C54	B3
7C56	C2
7D05	E3
7D07	E4
7E01	A6
7E03	A7
7E05	A7
7E06	A6
7E08	A6
7E10	A7
7E30	A6
7E31	A6
7E32	A6
7E33	A7
7F01	C7
7F06	B7
7F08	B7
7F09	B7
7F15	B7
7F16	C7
7G00	E6
7G01	E5
7G02	E5
7G03	E5
7G06	F5
7G07	F5
7G08	F5
7G09	E5
7G20	F4
7J00	C4
7J02	C3
7J50	D3
7J51	C3
7J54	D3
7M01	E9
7N01	C7
7N50	B7
7N51	C7
7N52	B7
7N53	B7
7N54	C7
7N55	C6
7N56	C6
7Q01	E6
7R02	F8
7U01	C9
7U02	C9
7U03	D9
7V00	D6
7V03	E6
9C00	B3
9C01	C3
9C55	B2
9D62	E4
9D63	E4
9D67	E4
9D68	E4
9D69	E4
9D70	E4
9D71	E4
9D72	E4
9D73	E4
9D74	E4
9D75	E4
9E00	A9
9E01	B9
9E02	A9
9E03	A9
9E04	A9
9E05	B9
9E10	B9
9E11	B9
9E13	B9
9E14	A8
9E15	A8
9E16	B8
9E17	B8
9E18	A9
9E19	A9
9E20	A9
9E21	A9
9E22	B9
9E23	B8
9E24	A9
9E25	A9
9E26	B8
9E27	A9
9E28	A9
9E29	A9
9E30	A9
9E31	A9
9E32	A9
9E33	A9
9E35	A6
9E36	A5
9E37	A6
9E38	A6
9E40	A7
9E42	A6
9E43	B9
9E44	B9
9E47	B9
9E48	B9
9E49	B9
9E50	B9
9E51	B9
9E52	B9
9E53	B9
9E54	B9
9E55	A9
9E56	A9
9E57	A9
9E58	A9
9E59	A9
9E60	A9
9E61	A9
9E62	A9
9E63	A9
9E64	A9
9E65	A9
9E66	A9
9E67	A9
9E68	A9
9E69	A9
9E70	A9
9E71	A9
9E72	A9
9E73	A9
9E74	A9
9E75	A9
9E76	A9
9E77	A9
9E78	A9
9E79	A9
9E80	A9
9E81	A9
9E82	A9
9E83	A9
9E84	A9
9E86	A9
9E87	A9

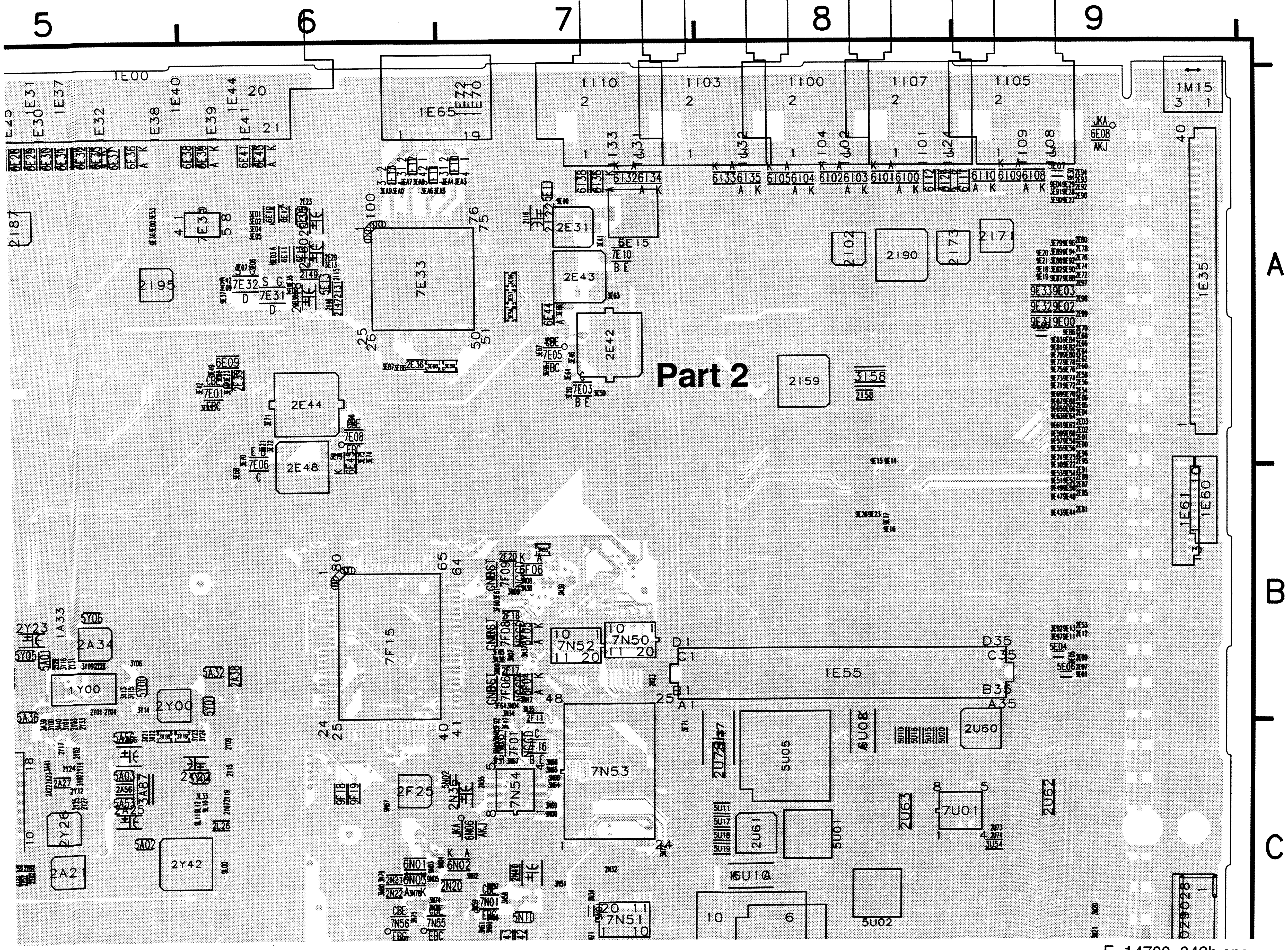


Layout Small Signal Board (Part 1 Top Side)


1
2
3
4
5
A
B
C
Part 1
1T03
1T02
1010
1000
2003
2017
2012
6002
REF02
2189
2187
2C52
2C32
1C33
2C34
OUT 7C32
1C55
1K00
2K00
7J00
1C52
1C53
1C51
2K26
2K60
3C87
3C31
2A52
2A34
1Y00
1A55
1A52
1A53
1A51
2Y26
2A21
7A56
7C56
E25
E28
E30
E31
E32
E37

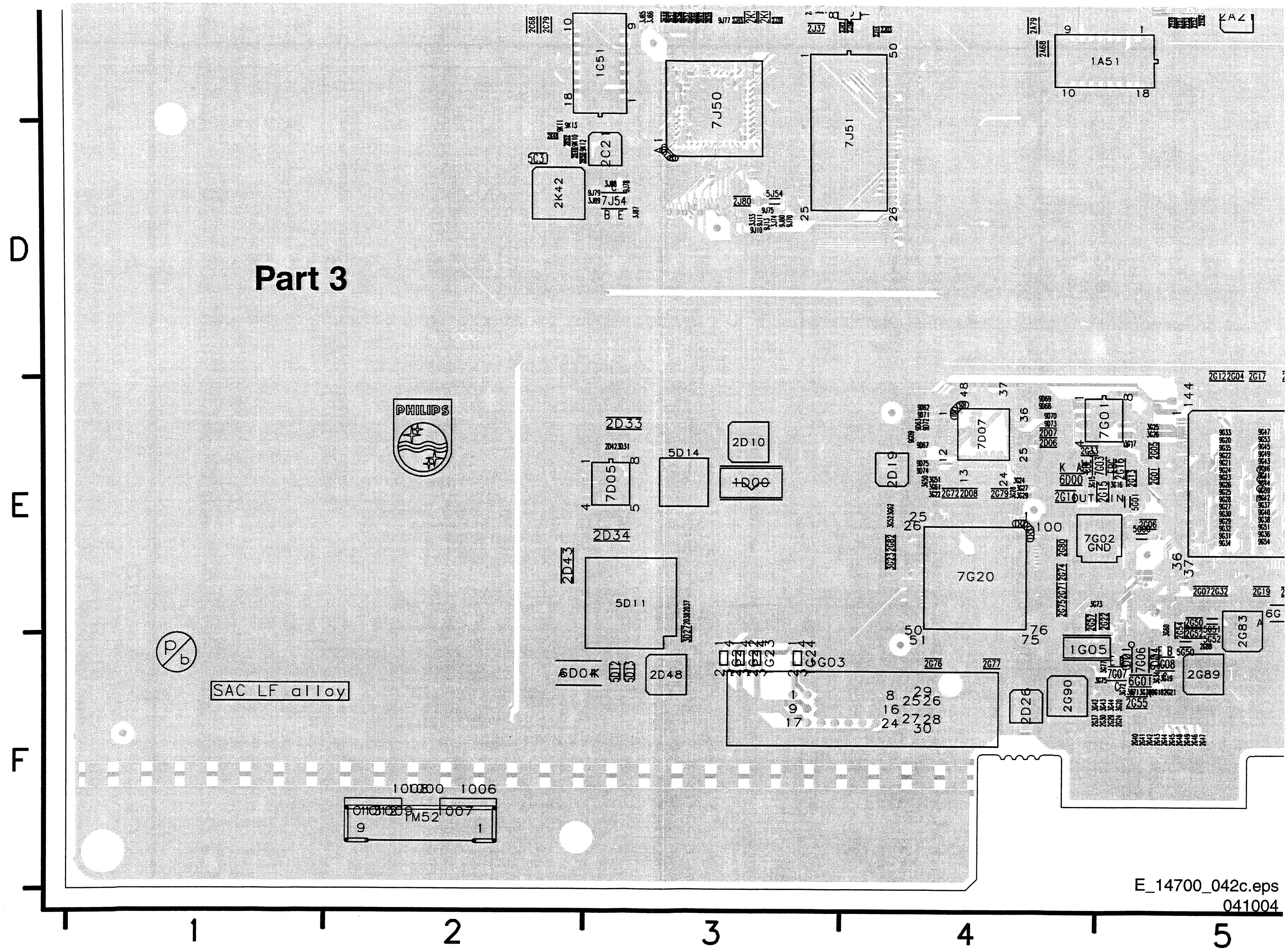
E_14700_042a.eps
100404

Lay out Small Signal Board (Part 2 Top Side)

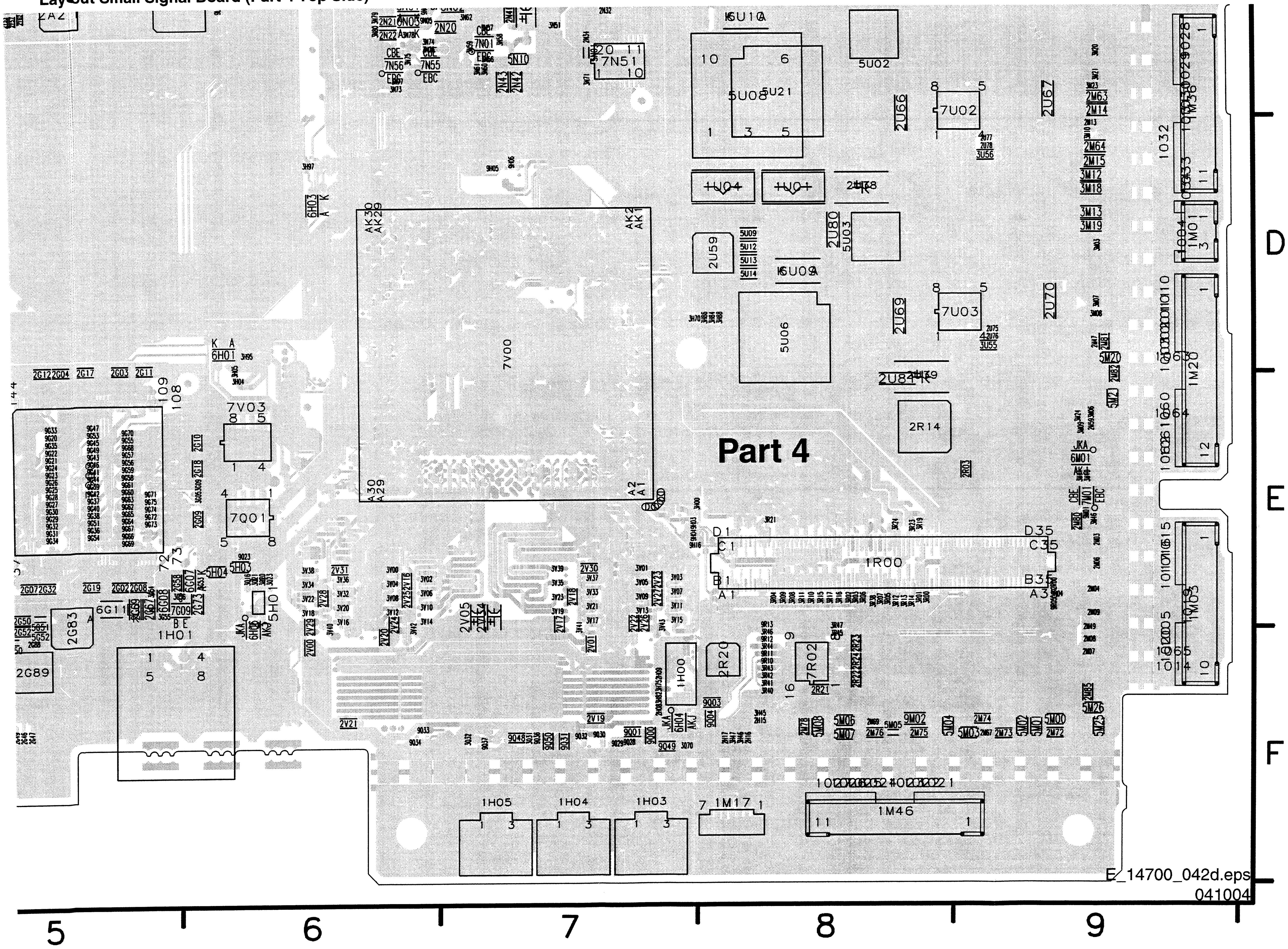

5
6
7
8
9
A
B
C
Part 2
1E00
1E65
1110
1103
1100
1107
1105
1M15
1E35
1E61
1E60
7E33
2E31
2E43
2E42
2E44
2E48
2195
2159
3158
2158
2102
2190
2173
2171
7E31
7E32
7E01
7E06
7E08
7E03
7E05
7E10
6E15
7F15
1E55
7N53
7N52
7N50
7N54
7N51
2F25
5U05
5U01
5U02
5U10
2U60
2U61
2U62
2U63
7U01
2Y00
2Y42
2Y26
2A21
2A34
1Y00
2Y23
1A33

E_14700_042b.eps
041004

Layout Small Signal Board (Part 3 Top Side)


Part 3
D
E
F
1
2
3
4
5
PHILIPS
SAC LF alloy
1C51
7J50
7J51
1A51
2C2
2K42
7J54
2D33
2D10
5D14
7D05
2D34
2D43
5D11
2D48
6D00
2D19
7D07
7G01
7G02
GND
7G20
1G05
2G90
2D26
2G83
2G89
6G03
1M52
1006
E_14700_042c.eps
041004

Layout Small Signal Board (Part 4 Top Side)


Part 4
7V00
1R00
5U10
5U08
5U21
5U02
7U02
7U03
5U06
5U03
5U09
2U59
2R14
7V03
7Q01
7N51
7R02
1H00
1H01
1M46
1M17
1H05
1H04
1H03
1M36
1M01
1M20
1M03
2G83
2G89
D1
D35
C1
C35
B1
B35
A1
A35
AK30
AK29
AK2
AK1
A30
A29
A2
A1
D
E
F
5
6
7
8
9
E_14700_042d.eps
041004

Layout Small Signal Board (Overview Bottom Side)

1D01	E7
1F01	B4
1G00	F5
1G02	E5
1G50	F5
1G51	F5
1G52	F5
1G53	F5
1G54	F5
1G55	F5
1H06	F3
1H07	F3
1H08	F3
1R02	F2
1R03	F2
1U02	D2
2A01	B6
2A02	B6
2A03	C6
2A05	B6
2A06	B6
2A08	B5
2A11	B5
2A12	B5
2A13	B5
2A14	B5
2A15	B5
2A16	B5
2A17	B5
2A18	B5
2A19	B5
2A20	B5
2A28	C5
2A32	B6
2A33	B4
2A37	B5
2A40	B5
2A41	B5
2A44	B5
2A53	B5
2A55	C6
2A59	B6
2A60	B6
2A63	C6
2A67	C6
2A69	C6
2A71	C6
2A74	C6
2A78	C6
2A80	B6
2A81	C5
2C01	B8
2C02	B8
2C03	C8
2C05	B8
2C06	B8
2C07	B8
2C08	B8
2C09	B8
2C12	B7
2C13	B7
2C15	B7
2C16	B7
2C17	B7
2C18	B7
2C19	B7
2C20	B7
2C25	C8
2C28	C7
2C30	B7
2C37	B7
2C41	B7
2C44	B7
2C53	B7
2C55	C8
2C56	D8
2C59	B8
2C60	B8
2C66	D8
2C67	C8
2C69	C8
2C71	C8
2C74	C8
2C78	C8
2C80	B8
2C81	B7
2C82	B7
2D01	E6
2D02	F6
2D03	E6
2D04	E6
2D05	E6
2D11	E7
2D12	E8
2D13	E7
2D20	E6
2D21	F6
2D22	F6
2D23	E6
2D24	E6
2D25	E6
2D30	E7
2D31	E7
2D32	E8
2D35	E7
2D36	E7
2D39	E7
2D40	E8
2D41	E7
2D44	E7
2D45	E7
2D46	E7
2D47	E7
2D49	E7
2D67	F6
2D68	F6
2D69	F6
2E13	A4
2E14	A4
2E15	A4
2E16	A4
2E17	A3
2E18	A4
2E19	A3
2E20	A3
2E21	A3
2E22	A3
2E24	A1
2E25	A5
2E26	A4
2E27	A5
2E28	A5
2E30	A5
2E32	A4
2E34	A5
2E37	A5
2E38	A5
2E40	A1
2E41	A1
2E46	A5
2E47	A5
2F00	B4
2F01	B4
2F02	B4
2F03	B3
2F04	C4
2F05	B4
2F06	B3
2F07	B3
2F12	B3
2F13	C4
2F14	B3
2F15	B3
2F16	C3
2F21	C3
2F23	C3
2F24	B4
2G00	F5
2G20	E5
2G23	E6
2G25	E6
2G26	E5
2G27	F5
2G28	F5
2G31	F6
2G34	E5
2G35	E5
2G36	F6
2G38	F6
2G39	F6
2G51	E5
2G53	E5
2G56	F6
2G59	E6
2G60	F7
2G61	F7
2G62	F7
2G63	F7
2G64	F7
2G65	F7
2G66	F7
2G68	F7
2G70	F6
2G78	E6
2G81	E6
2G84	E6
2G85	E6
2G86	E6
2G87	E6
2H01	E3
2H04	D3
2H06	D4
2H07	D4
2H10	D4
2H11	D4
2H12	D4
2I00	A2
2I01	A2
2I03	A2
2I04	A2
2I05	A3
2I06	A3
2I07	A1
2I08	A1
2I09	A1
2I12	A2
2I13	A1
2I14	A1
2I19	A4
2I20	A4
2I21	A4
2I23	A4
2I24	A3
2I32	A4
2I33	A3
2I34	A4
2I35	A2
2I36	A2
2I37	A2
2I38	A2
2I39	A2
2I40	A2
2I42	A3
2I43	A3
2I44	A3
2I45	A4
2I50	A1
2I51	A1
2I52	A2
2I53	A2
2I54	A2
2I61	A3
2I62	A3
2I63	A3
2I64	A3
2I70	A2
2I91	B1
2I92	B1
2I93	B1
2I94	A5
2I96	A5
2I97	A5
2I98	B1
2J20	C7
2J21	C6
2J43	C7
2J51	D7
2J52	C7
2J53	D7
2J54	C7
2J59	D6
2J60	D7
2J61	C7
2J62	C7
2J63	D6
2J64	C6
2J65	C7
2J66	D7
2J67	D7
2J68	C7
2J69	C7
2J70	C7
2J71	C7
2J72	D7
2J73	C7
2J74	C7
2J75	D7
2J76	D7
2J77	D7
2J78	D6
2J79	D7
2J81	C7
2J82	C7
2K05	B7
2K06	B6
2K08	C7
2K10	B7
2K11	B7
2K13	B7
2K16	B7
2K18	B6
2K20	C7
2K21	C7
2K22	D7
2K23	D7
2K30	B7
2K31	B7
2K32	B7
2K35	C8
2K36	C7
2K38	B7
2K40	C7
2K41	C7
2K44	C7
2K45	C7
2K47	B7
2K54	B7
2K55	B7
2K63	C7
2K65	C8
2K66	C8
2L20	C5
2M00	C1
2M01	C1
2M02	C1
2M10	D1
2M11	D1
2M12	D1
2M16	F8
2M17	F8
2M18	F8
2M19	F8
2M20	D1
2M21	D1
2M28	F8
2M29	F8
2M30	F8
2M31	F8
2M50	D1
2M51	E1
2M58	D1
2M62	F8
2M65	F1
2M66	F1
2M68	F2
2M70	F2
2M71	F2
2M77	F2
2M90	E1
2N31	B3
2N33	B3
2N60	C4
2N61	C4
2N62	C4
2N63	C4
2N64	C4
2N65	C4
2N66	C4
2N68	C4
2N69	C4
2N70	C4
2N71	C4
2N72	C4
2N73	C4
2O13	A6
2O22	A6
2O23	A6
2O27	A6
2O28	A6
2Q00	D3
2Q01	D3
2Q02	D3
2Q03	E3
2Q04	D3
2Q05	E3
2Q06	D3
2Q07	D4
2Q08	D3
2Q09	D3
2Q10	D3
2Q11	D4
2Q12	D3
2Q13	D3
2Q14	D4
2Q15	D4
2Q16	D3
2Q17	D3
2Q18	D4
2Q19	E4
2Q20	E3
2Q21	D3
2Q22	D3
2Q23	D3
2Q24	E3
2Q25	D4
2Q26	D3
2Q27	E3
2Q28	D3
2Q29	D4
2Q30	D3
2Q31	D4
2Q32	D3
2Q33	D3
2Q34	D3
2Q35	D3
2Q37	E3
2Q38	D3
2Q39	E3
2Q40	D3
2Q41	E3
2Q42	E3
2Q43	E3
2Q44	E3
2Q45	E3
2Q46	D3
2Q47	E3
2Q48	D3
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2Q50	D3
2Q51	E3
2Q52	E3
2Q53	E3
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2Q55	E3
2Q56	E3
2Q57	E3
2Q58	E3
2Q59	E3
2Q63	E3
2Q64	E3
2Q65	E3
2Q66	D4
2Q67	E4
2Q69	E4
2Q70	F4
2Q71	D4
2Q72	D4
2Q73	D4
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2R16	E2
2R17	E2
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2T03	A6
2T04	A9
2T05	A9
2T06	A6
2T07	A6
2T08	A8
2T09	A9
2T10	A9
2T11	A8
2T12	A8
2T13	A9
2T14	A7
2T15	A6
2T16	A6
2T18	A8
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2U02	C1
2U03	C1
2U04	C1
2U05	C2
2U06	C2
2U07	C1
2U08	C1
2U09	C1
2U10	C1
2U11	D2
2U12	C1
2U13	C1
2U14	C2
2U15	C1
2U16	D2
2U17	E2
2U18	D1
2U19	D1
2U20	D1
2U21	D1
2U22	C1
2U23	D1
2U24	D1
2U25	C1
2U26	C1
2U27	D1
2U28	E1
2U29	D2
2U30	D1
2U40	E2
2U41	D2
2U42	C2
2U43	D1
2U44	D1
2U45	C1
2U46	C2
2U47	D2
2U50	C2
2U51	D2
2U52	C1
2U53	D1
2U54	E1
2U55	C1
2U56	D1
2U57	E1
2U58	C2
2U71	C2
2U72	B2
2U87	C2
2U88	C2
2U90	D2
2U91	D2
2U92	C2
2V02	E3
2V03	E4
2V04	E4
2V06	E3
2V07	E3
2V08	E4
2V09	E4
2V10	E4
2V11	E3
2V12	E3
2V13	E3
2V14	E4
2V15	E4
2V32	E3
2V33	E3
2V35	D3
2V36	D3
2V37	D3
2Y05	B5
2Y06	B4
2Y08	C5
2Y10	B5
2Y11	B5
2Y13	B5
2Y16	B5
2Y18	B4
2Y20	C5
2Y21	C5
2Y30	B5
2Y40	C5
2Y41	C5
2Y43	C6
2Y44	C5
2Y45	C5
2Y47	B5
2Y65	C6
3A31	B5
3A50	B5
3A53	C6
3A65	B5
3A66	B5
3A67	B5
3A80	B6
3A81	B6
3A82	B6
3A83	B6
3A84	B6
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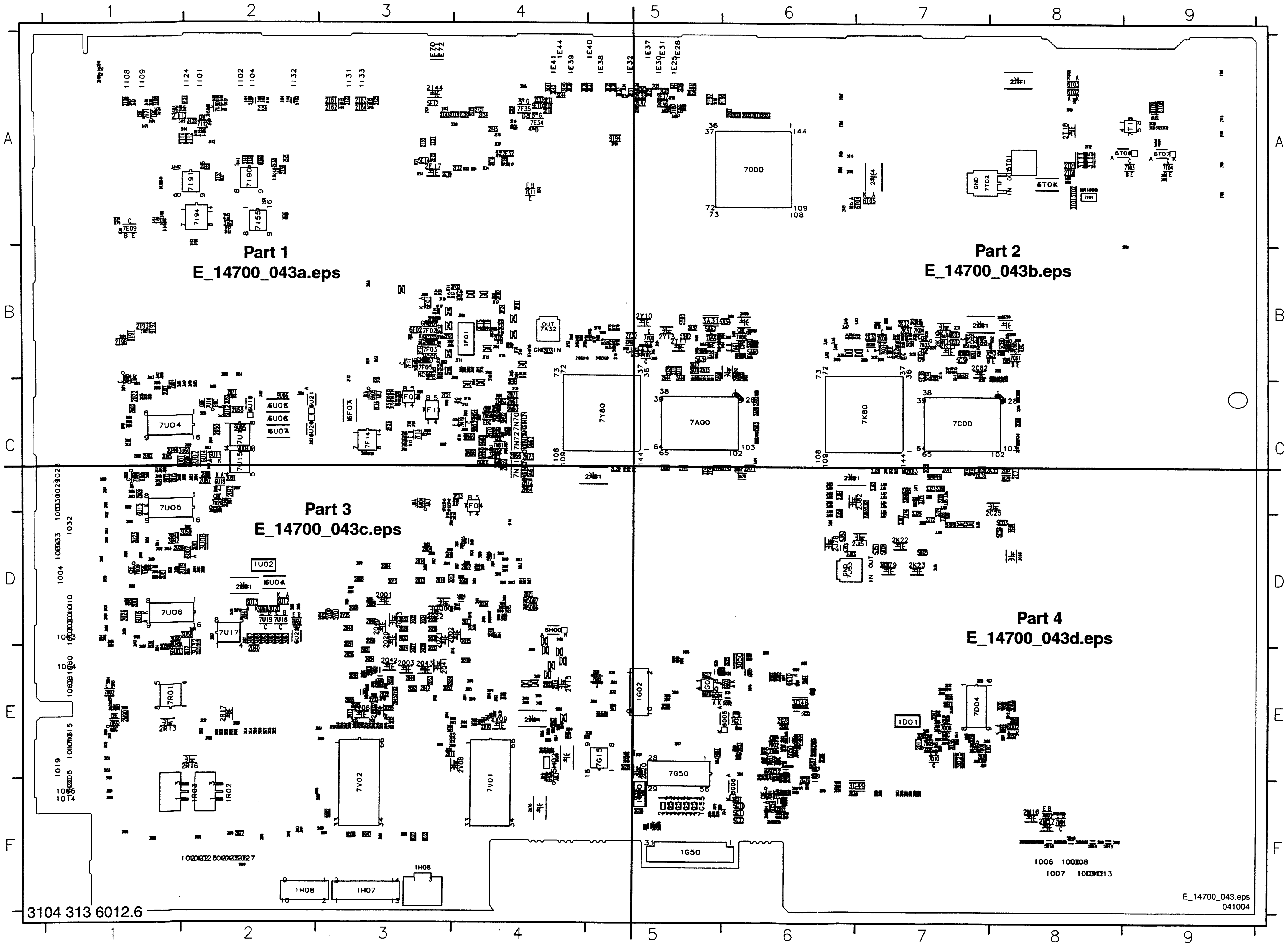
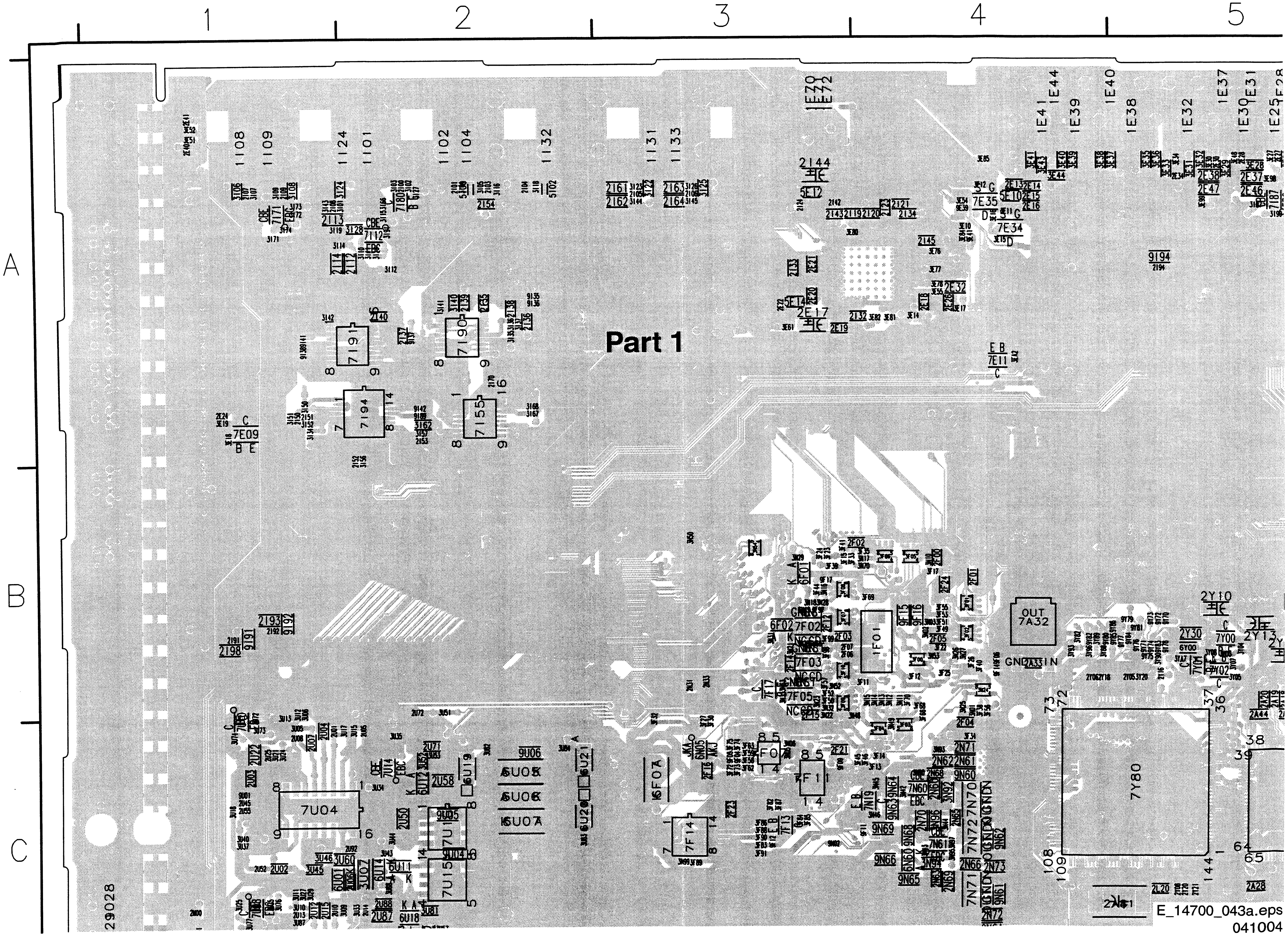
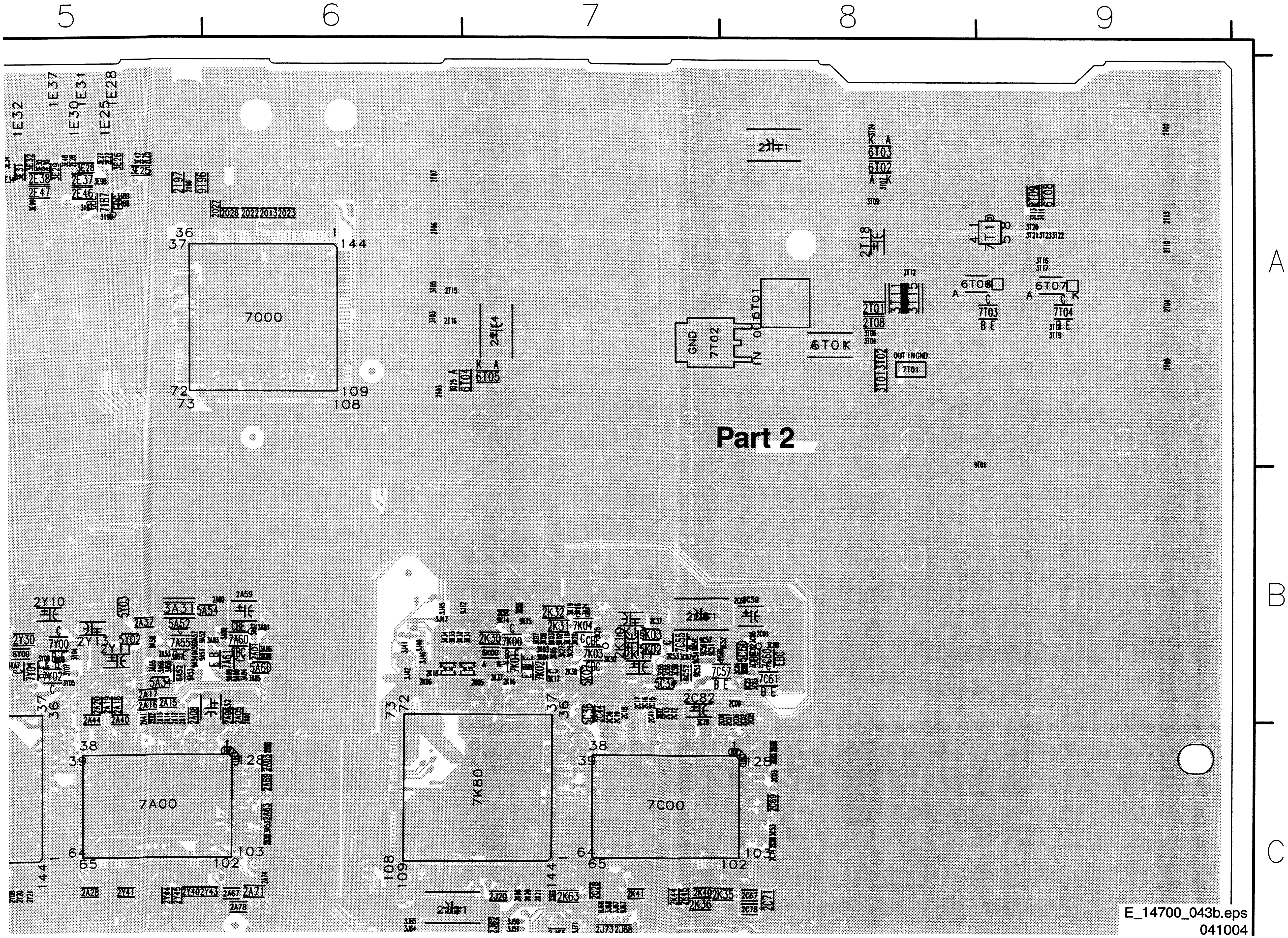
9Y85	B5
9Y86	B5



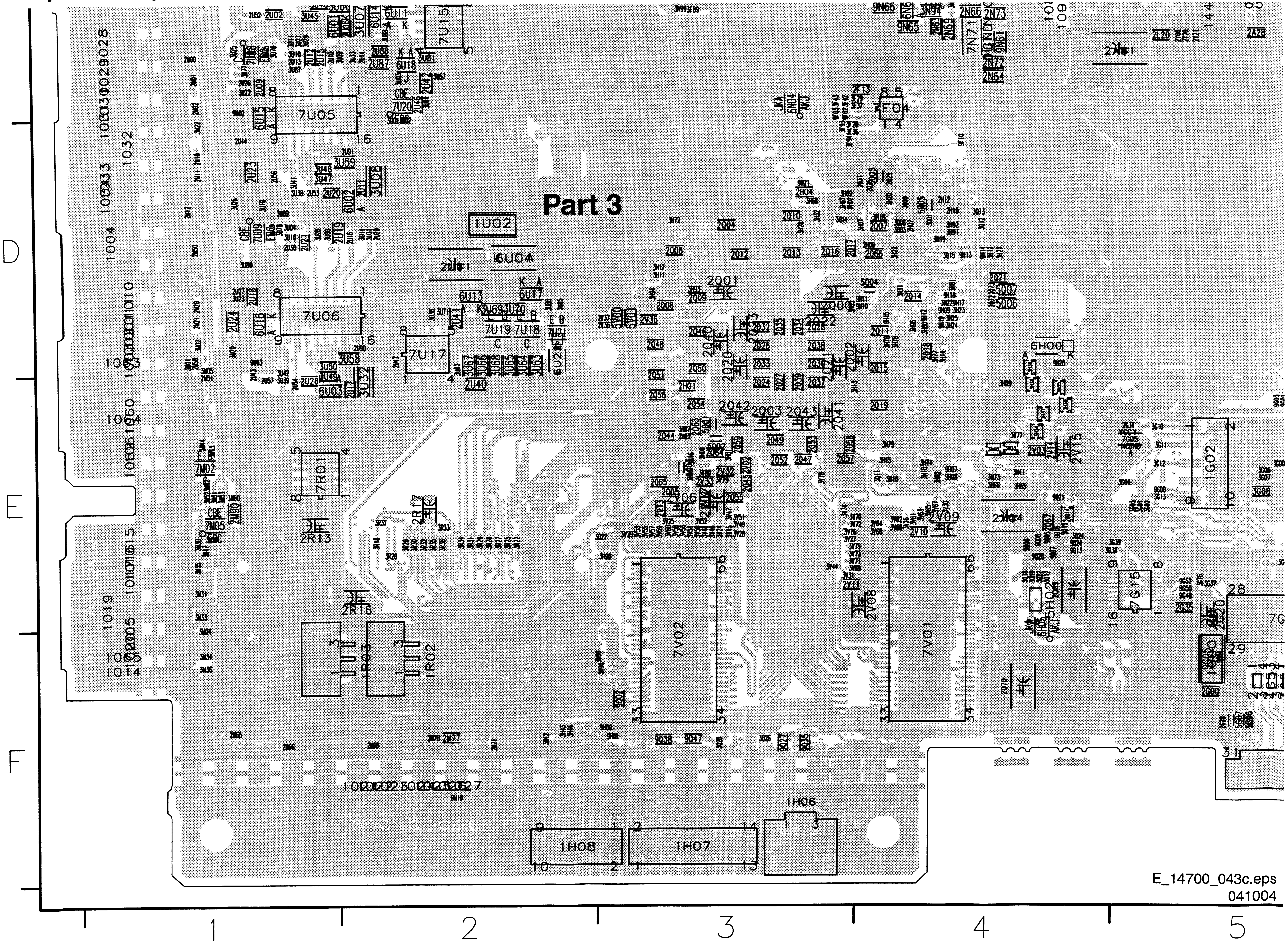
Layout Small Signal Board (Part 1 Bottom Side)


1
2
3
4
5
A
B
C
Part 1
7191
7190
7194
7155
7E09
7E35
7E34
7E11
7A32
OUT
7Y80
7U04
7F14
1F01
9U06
6U05
6U06
6U07
6F07
E_14700_043a.eps
041004

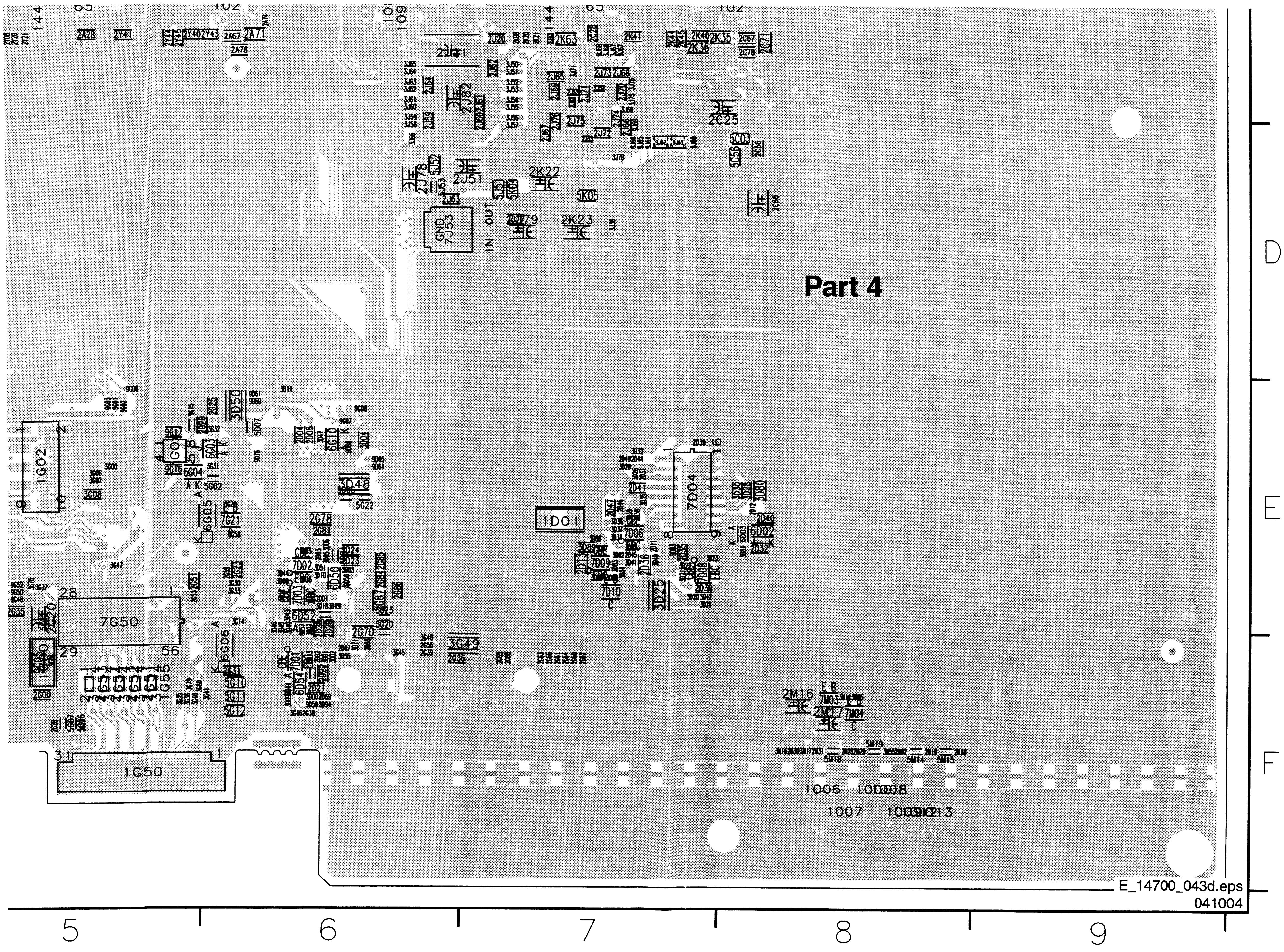
Layout Small Signal Board (Part 2 Bottom Side)


5
6
7
8
9
A
B
C
Part 2
7000
7A00
7K80
7C00
7T02
GND
OUT
IN
6T01
6T0K
7T03
7T04
6T06
6T07
6T03
6T02
2T01
2T08
2T18
6T05
6T04
7T01
1E32
1E37
1E30
1E31
1E25
1E28
2Y10
2Y30
7Y00
2Y13
5Y02
3A31
5A54
5A52
7A55
7A60
5A60
5A34
2A37
2A17
2A16
2A15
2A44
2A40
2A28
2Y41
2Y402Y43
2A67
2A71
2A78
2K32
2K31
7K04
2K30
7K00
7K03
7K02
2K82
2K63
2K41
2K40
2K35
2K36
2J20
7C55
7C57
7C61
7C60
2C82
2C59
2067
2C78
2C71
E_14700_043b.eps
041004

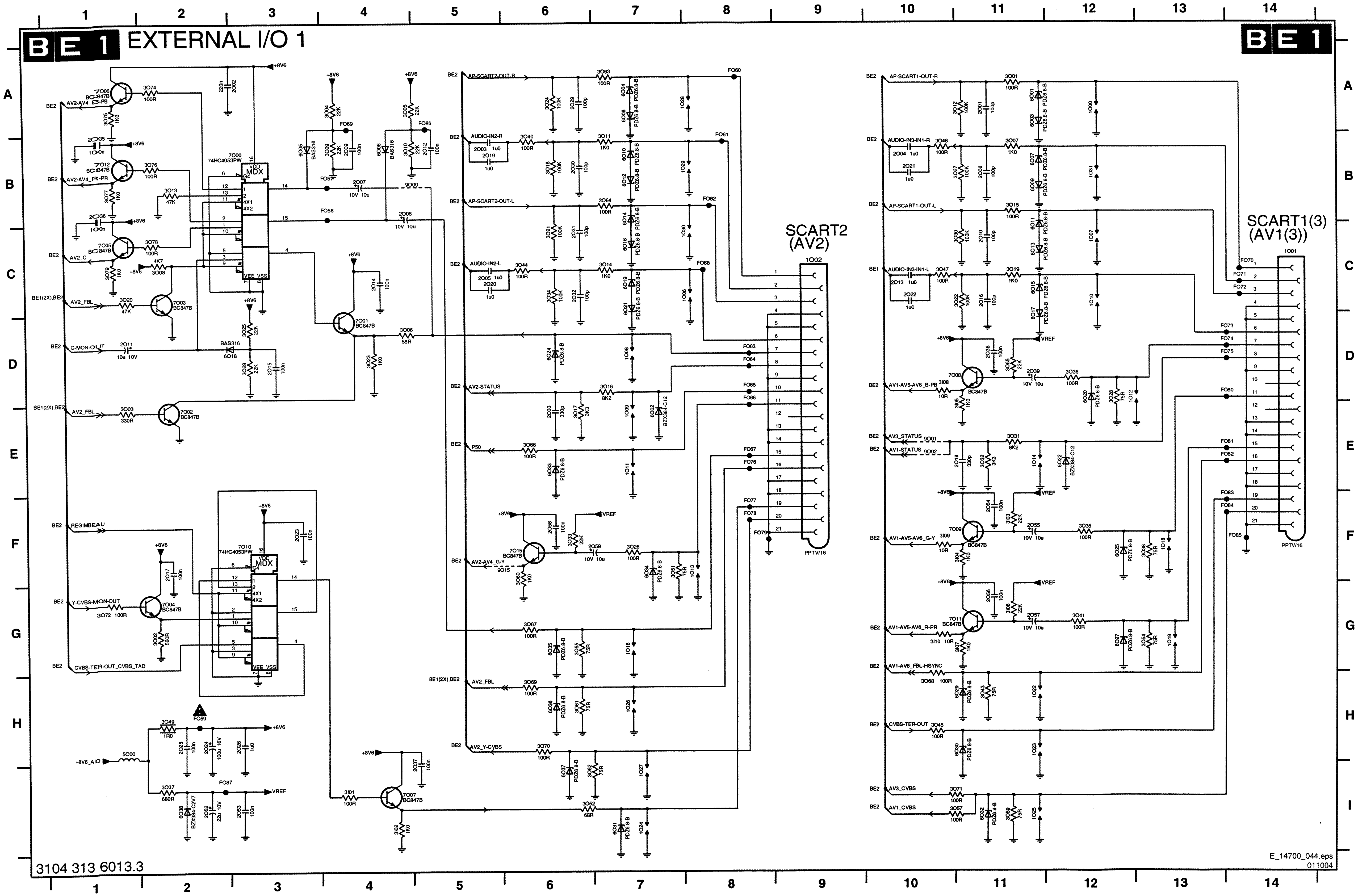
Layout Small Signal Board (Part 3 Bottom Side)


Part 3
D
E
F
1
2
3
4
5
7U05
7U06
7U17
7U15
7R01
1R03
1R02
7V02
7V01
7G15
1G02
1U02
6U04
1H08
1H07
1H06
6H00
F04
2001
2003
2042
2043
2V09
E_14700_043c.eps
041004

Layout Small Signal Board (Part 4 Bottom Side)

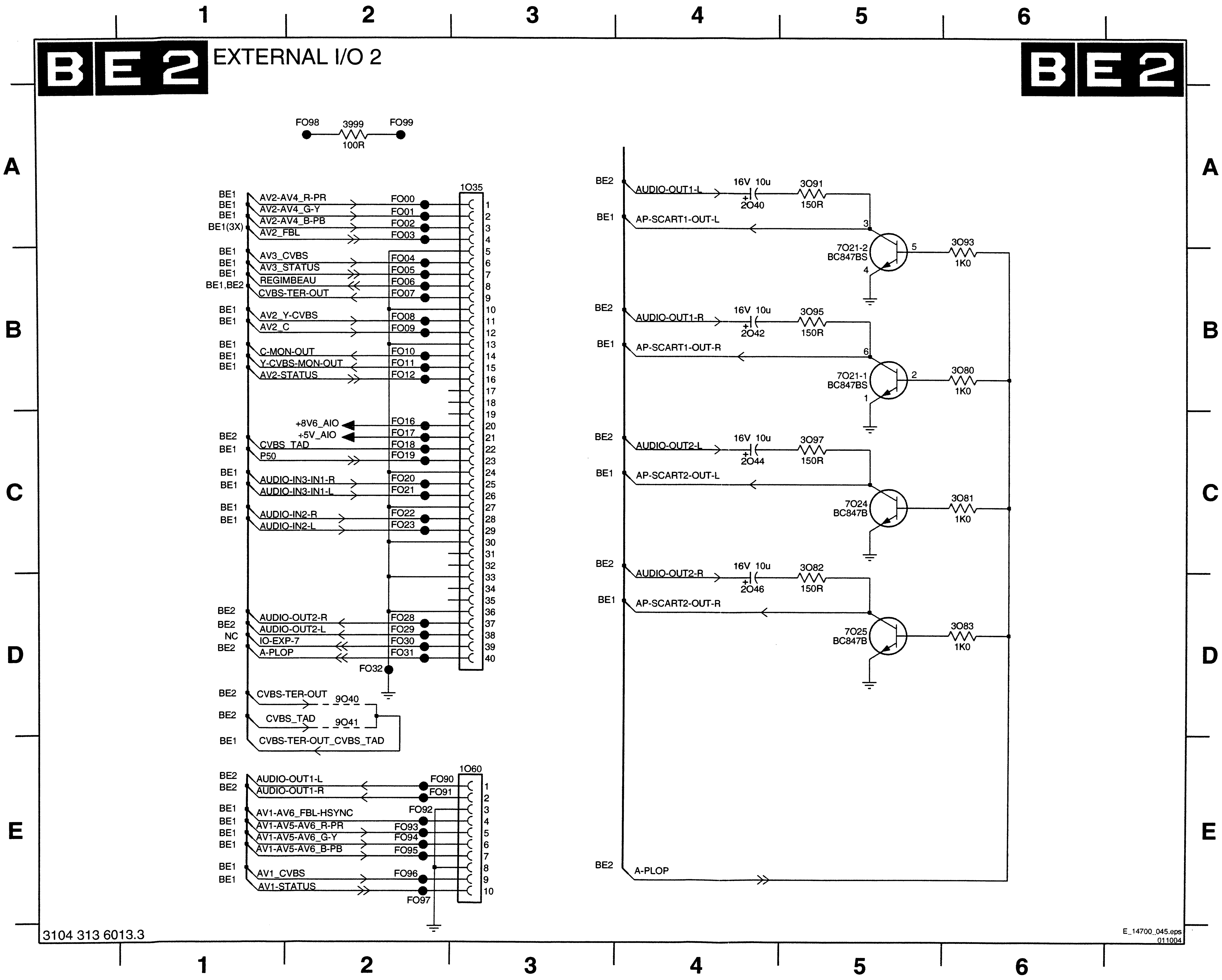

Part 4
1G02
7G50
1G50
1D01
7D04
7J53
GND
IN
OUT
2J51
2J78
2J82
2K22
2K23
2K63
2K35
2K36
2C25
5C03
5K05
3D50
3D48
3G49
6G04
6G05
6G06
7G21
2G78
2G81
7D02
6D50
6D52
7D03
6D54
7D01
2G70
7D06
7D09
7D10
3D89
2D13
2D36
3D27
6D02
2D40
3D80
2M16
2M17
7M03
7M04
5M18
5M19
5M14
5M15
1006
1007
2A28
2Y41
2A67
2A71
2A78
2J20
2K41
2C67
2C78
2C71
5G10
5G11
5G12
2G00
2G35
D
E
F
5
6
7
8
9
E_14700_043d.eps
041004

External I/O 1


BE1 EXTERNAL I/O 1
BE1
SCART2
(AV2)
1002
SCART1(3)
(AV1(3))
1001
7000
74HC4053PW
MDX
7010
74HC4053PW
AP-SCART2-OUT-R
AUDIO-IN2-R
AP-SCART2-OUT-L
AUDIO-IN2-L
AV2-STATUS
P50
AV2-AV4_G-Y
AV2_FBL
AV2_Y-CVBS
AP-SCART1-OUT-R
AUDIO-IN3-IN1-R
AP-SCART1-OUT-L
AUDIO-IN3-IN1-L
AV1-AV5-AV6_B-PB
AV3_STATUS
AV1-STATUS
AV1-AV5-AV6_G-Y
AV1-AV5-AV6_R-PR
AV1-AV6_FBL-HSYNC
CVBS-TER-OUT
AV3_CVBS
AV1_CVBS
AV2-AV4_B-PB
AV2-AV4_R-PR
AV2_C
AV2_FBL
C-MON-OUT
REGIMBEAU
Y-CVBS-MON-OUT
CVBS-TER-OUT_CVBS_TAD
+8V6_AIO
+8V6
VREF
PPTV/16
3104 313 6013.3
E_14700_044.eps
011004

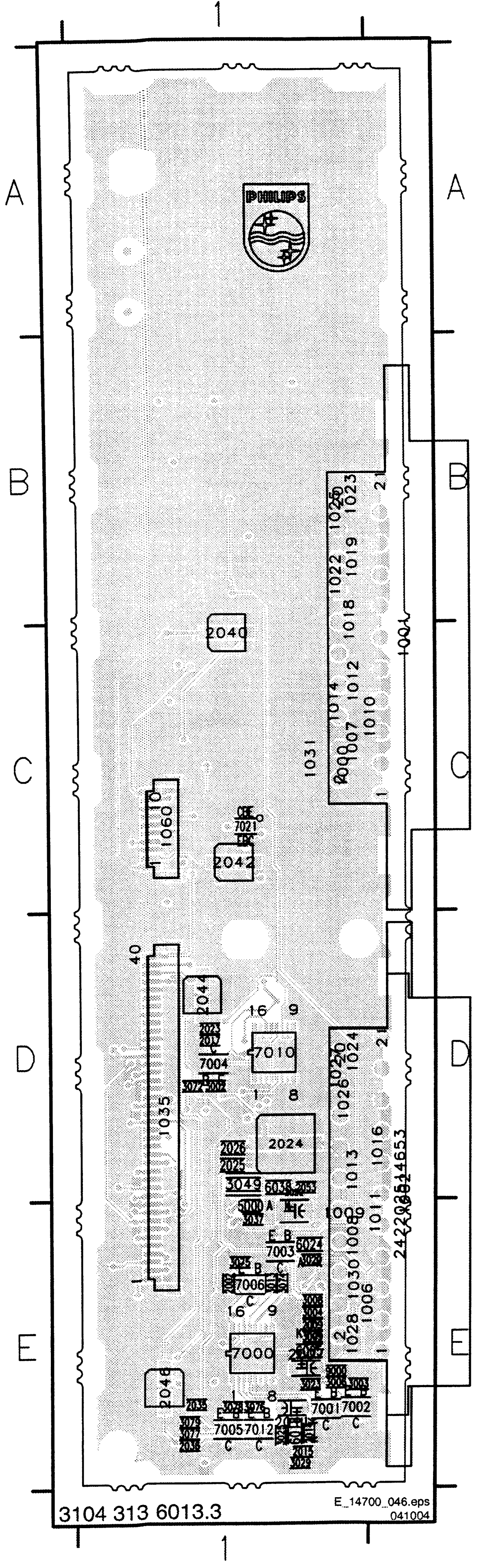
1000 A12	3034 C6	F077 F8
1001 C14	3035 F12	F078 F8
1002 C9	3036 D12	F079 F8
1006 C8	3037 I2	F080 D14
1007 C12	3038 F13	F081 E14
1008 D7	3040 B6	F082 E14
1009 E7	3041 G12	F083 F14
1010 C12	3043 H11	F084 F14
1011 E7	3044 C6	F085 F14
1012 D12	3045 H10	F086 A5
1013 F8	3046 B10	F087 I2
1014 E11	3047 C10	
1016 G7	3049 H2	
1018 F13	3051 F7	
1019 G13	3052 I6	
1022 H11	3054 G13	
1023 H11	3055 G6	
1024 I7	3057 I10	
1025 I11	3059 I11	
1026 H7	3060 F6	
1027 I7	3061 H6	
1028 A8	3062 I6	
1029 B8	3063 A7	
1030 C8	3064 B7	
1031 B12	3065 D11	
2001 A11	3066 E6	
2002 A3	3067 G6	
2003 B5	3068 H10	
2004 B10	3069 H6	
2005 C5	3070 H6	
2006 B11	3071 I10	
2007 B4	3072 G1	
2008 B4	3074 A2	
2009 B4	3075 A1	
2010 C11	3076 B2	
2011 D1	3077 B1	
2012 B5	3078 C2	
2013 C10	3079 C1	
2014 C4	5000 H1	
2015 D3	6001 A11	
2016 C11	6002 E7	
2017 F2	6003 A11	
2018 E11	6004 A7	
2019 B5	6005 B3	
2020 C5	6006 B4	
2021 B10	6007 B11	
2022 C10	6008 A7	
2023 F3	6009 B11	
2024 H2	6010 B7	
2025 H2	6011 C11	
2026 H3	6012 B7	
2029 A6	6013 C11	
2030 B6	6014 B7	
2031 C6	6015 C11	
2032 C6	6016 C7	
2033 E6	6017 D11	
2035 B1	6018 D2	
2036 B1	6019 C7	
2037 I5	6020 D12	
2038 D11	6021 C7	
2039 D11	6022 E12	
2052 I2	6024 D6	
2053 I3	6025 F12	
2054 F11	6027 G12	
2055 F11	6029 H11	
2056 G11	6030 H11	
2057 G11	6031 I7	
2058 F6	6032 I11	
2059 F6	6033 E6	
3101 I4	6034 F7	
3102 I4	6035 G6	
3103 F11	6036 H6	
3104 F11	6037 I6	
3105 E11	6038 I2	
3106 G11	7000 B3	
3107 G11	7001 D4	
3108 D10	7002 E2	
3109 F10	7003 C2	
3110 G10	7004 G2	
3001 A11	7005 C1	
3002 G2	7006 A1	
3003 E1	7007 I4	
3004 A4	7008 D11	
3005 A4	7009 F11	
3006 D4	7010 F3	
3007 B11	7011 G11	
3008 C2	7012 B1	
3009 B4	7015 F6	
3010 B4	9000 B4	
3011 B7	9001 E10	
3012 A11	9002 E10	
3013 B2	9015 F5	
3014 C7	F057 B4	
3015 B11	F058 B4	
3016 D7	F059 H2	
3017 E6	F060 A8	
3018 B6	F061 B8	
3019 C11	F062 B8	
3020 C1	F063 D8	
3021 C6	F064 D8	
3022 C11	F065 D8	
3023 D4	F066 D8	
3024 A6	F067 E8	
3025 D3	F068 C8	
3026 F7	F069 A4	
3027 B11	F070 C14	
3028 D12	F071 C14	
3029 D3	F072 C14	
3030 C11	F073 D14	
3031 E11	F074 D14	
3032 E11	F075 D14	
3033 F6	F076 E8	

External I/O 2


BE2 EXTERNAL I/O 2
BE2
1 2 3 4 5 6
A B C D E
FO98 3999 100R FO99
1035
BE1 AV2-AV4_R-PR FO00
BE1 AV2-AV4_G-Y FO01
BE1 AV2-AV4_B-PB FO02
BE1(3X) AV2_FBL FO03
BE1 AV3_CVBS FO04
BE1 AV3_STATUS FO05
BE1 REGIMBEAU FO06
BE1,BE2 CVBS-TER-OUT FO07
BE1 AV2_Y-CVBS FO08
BE1 AV2_C FO09
BE1 C-MON-OUT FO10
BE1 Y-CVBS-MON-OUT FO11
BE1 AV2-STATUS FO12
+8V6_AIO FO16
+5V_AIO FO17
BE2 CVBS_TAD FO18
BE1 P50 FO19
BE1 AUDIO-IN3-IN1-R FO20
BE1 AUDIO-IN3-IN1-L FO21
BE1 AUDIO-IN2-R FO22
BE1 AUDIO-IN2-L FO23
BE2 AUDIO-OUT2-R FO28
BE2 AUDIO-OUT2-L FO29
NC IO-EXP-7 FO30
BE2 A-PLOP FO31
FO32
BE2 CVBS-TER-OUT 9040
BE2 CVBS_TAD 9041
BE1 CVBS-TER-OUT_CVBS_TAD
1060
BE2 AUDIO-OUT1-L FO90
BE2 AUDIO-OUT1-R FO91
BE1 AV1-AV6_FBL-HSYNC FO92
BE1 AV1-AV5-AV6_R-PR FO93
BE1 AV1-AV5-AV6_G-Y FO94
BE1 AV1-AV5-AV6_B-PB FO95
BE1 AV1_CVBS FO96
BE1 AV1-STATUS FO97
BE2 AUDIO-OUT1-L 16V 10u 2040 3091 150R
BE1 AP-SCART1-OUT-L
7021-2 BC847BS 3093 1K0
BE2 AUDIO-OUT1-R 16V 10u 2042 3095 150R
BE1 AP-SCART1-OUT-R
7021-1 BC847BS 3080 1K0
BE2 AUDIO-OUT2-L 16V 10u 2044 3097 150R
BE1 AP-SCART2-OUT-L
7024 BC847B 3081 1K0
BE2 AUDIO-OUT2-R 16V 10u 2046 3082 150R
BE1 AP-SCART2-OUT-R
7025 BC847B 3083 1K0
BE2 A-PLOP
3104 313 6013.3
E_14700_045.eps 011004

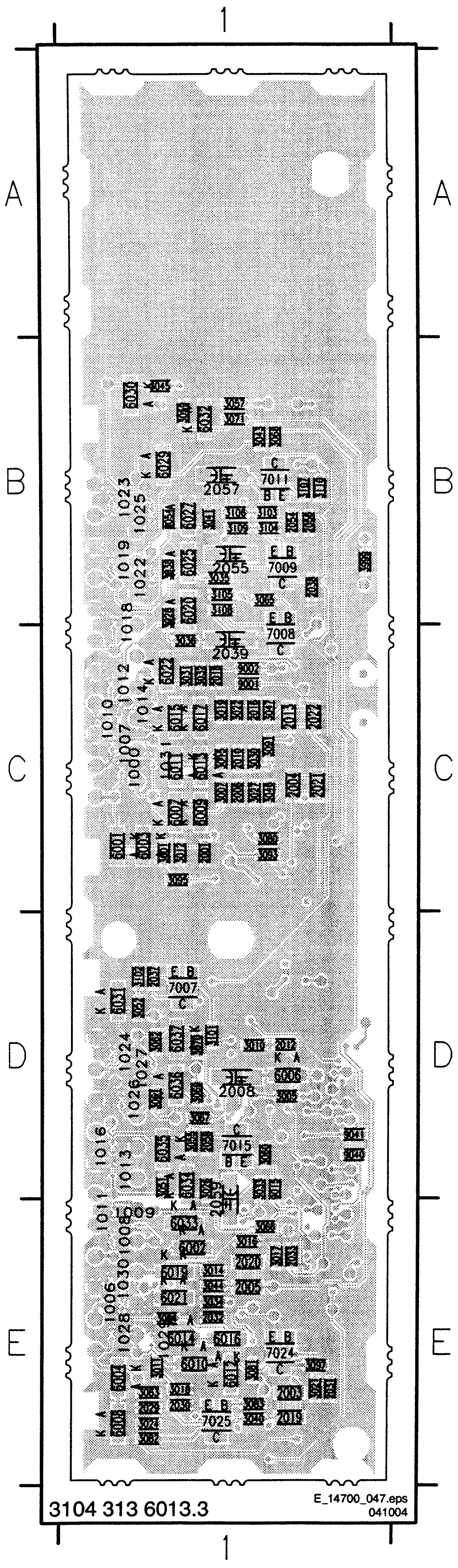
1035	A3
1060	E3
2040	A4
2042	B4
2044	C4
2046	D4
3999	A2
3080	B6
3081	C6
3082	C5
3083	D6
3091	A5
3093	A6
3095	B5
3097	C5
7021-1	B5
7021-2	B5
7024	C5
7025	D5
9040	D2
9041	E2
FO00	A2
FO01	A2
FO02	A2
FO03	A2
FO04	B2
FO05	B2
FO06	B2
FO07	B2
FO08	B2
FO09	B2
FO10	B2
FO11	B2
FO12	B2
FO16	C2
FO17	C2
FO18	C2
FO19	C2
FO20	C2
FO21	C2
FO22	C2
FO23	C2
FO28	D2
FO29	D2
FO30	D2
FO31	D2
FO32	D2
FO90	E2
FO91	E2
FO92	E2
FO93	E2
FO94	E2
FO95	E2
FO96	E2
FO97	E2
FO98	A2
FO99	A2

Layout External I/O Panel (Top Side)


1
A
B
C
D
E
PHILIPS
2040
2042
7021
1060
1031
1035
2044
7010
7004
2024
2026
2025
3049
7003
7006
7000
2046
7005
7012
7001
7002
1023
1019
1018
1012
1010
1013
1011
1009
1008
1006
1030
1028
1001
16
9
8
40
3104 313 6013.3
E_14700_046.eps
041004

1001	B1
1002	D1
1035	D1
1060	C1
2002	E1
2007	E1
2009	E1
2011	E1
2014	E1
2015	E1
2017	D1
2023	D1
2024	D1
2025	D1
2026	D1
2035	E1
2036	E1
2040	B1
2042	C1
2044	D1
2046	E1
2052	D1
2053	D1
3002	D1
3003	E1
3004	E1
3006	E1
3008	E1
3009	E1
3013	E1
3020	E1
3023	E1
3025	E1
3029	E1
3037	E1
3049	D1
3072	D1
3074	E1
3075	E1
3076	E1
3077	E1
3078	E1
3079	E1
5000	E1
6005	E1
6018	E1
6024	E1
6038	D1
7000	E1
7001	E1
7002	E1
7003	E1
7004	D1
7005	E1
7006	E1
7010	D1
7012	E1
7021	C1
9000	E1

Layout External I/O Panel (Bottom Side)


1
A
B
C
D
E
2057
7011
2055
7009
7008
2039
7007
2008
7015
7024
7025
1023
1025
1019
1022
1018
1012
1014
1010
1007
1024
1027
1026
1016
1013
1011
1009
1030
1028
1006
3104 313 6013.3
E_14700_047.eps
041004

2001	C1
2003	E1
2004	C1
2005	E1
2006	C1
2008	D1
2010	C1
2012	D1
2013	C1
2016	C1
2018	C1
2019	E1
2020	E1
2021	C1
2022	C1
2029	E1
2030	E1
2031	E1
2032	E1
2033	E1
2037	D1
2038	B1
2039	C1
2054	B1
2055	B1
2056	B1
2057	B1
2058	D1
2059	D1
3999	B1
3101	D1
3102	D1
3103	B1
3104	B1
3105	B1
3106	B1
3107	B1
3108	B1
3109	B1
3110	B1
3001	C1
3005	D1
3007	C1
3010	D1
3011	E1
3012	C1
3014	E1
3015	C1
3016	E1
3017	E1
3018	E1
3019	C1
3021	E1
3022	C1
3024	E1
3026	D1
3027	C1
3028	B1
3030	C1
3031	C1
3032	C1
3033	D1
3034	E1
3035	B1
3036	C1
3038	B1
3040	E1
3041	B1
3043	B1
3044	E1
3045	B1
3046	C1
3047	C1
3051	D1
3052	D1
3054	B1
3055	D1
3057	B1
3059	B1
3060	D1
3061	D1
3062	D1
3063	E1
3064	E1
3065	B1
3066	E1
3067	D1
3068	B1
3069	D1
3070	D1
3071	B1
3080	C1
3081	E1
3082	E1
3083	E1
3091	C1
3093	C1
3095	C1
3097	E1
6001	C1
6002	E1
6003	C1
6004	E1
6006	D1
6007	C1
6008	E1
6009	C1
6010	E1
6011	C1
6012	E1
6013	C1
6014	E1
6015	C1
6016	E1
6017	C1
6019	E1
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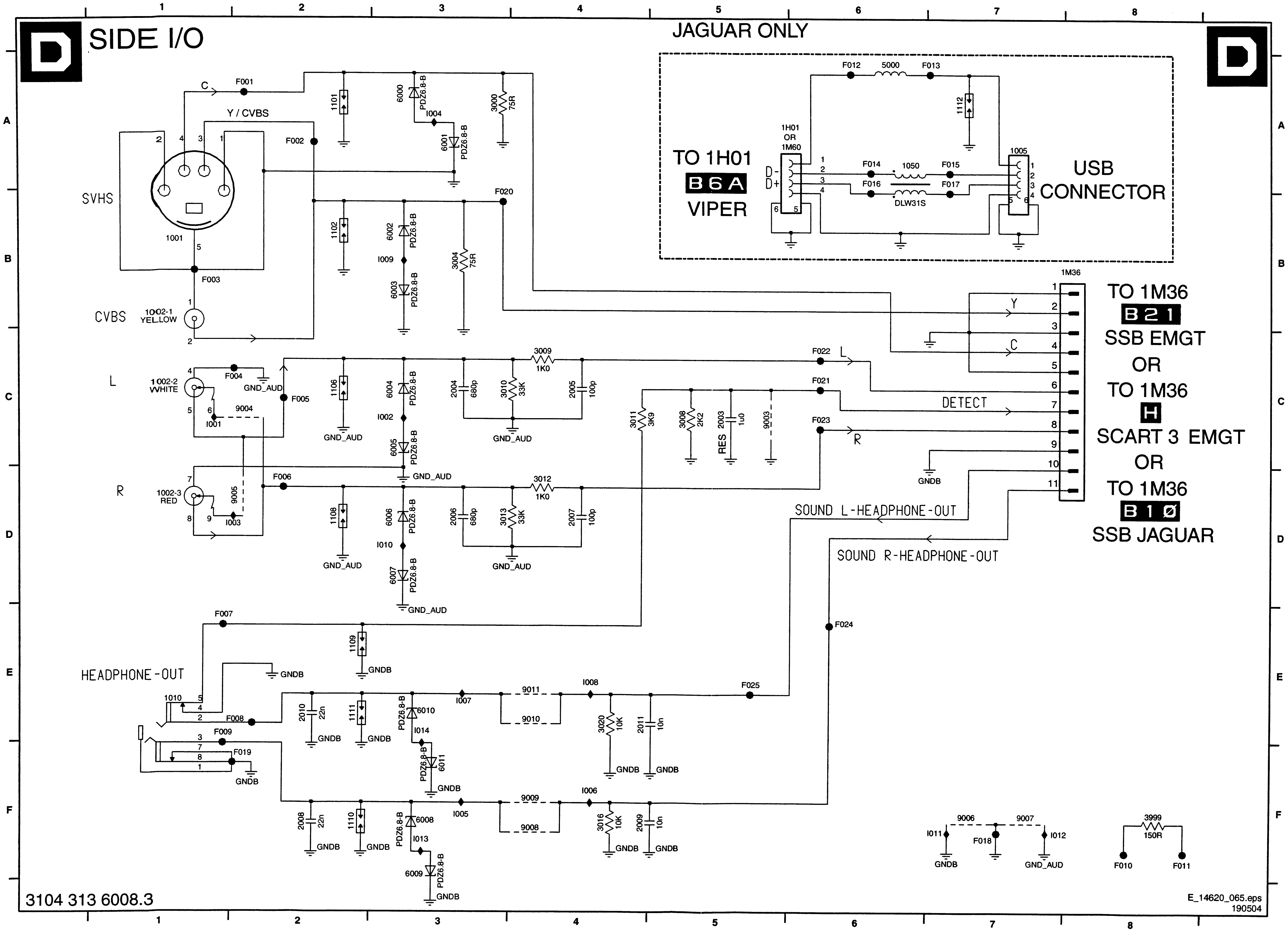
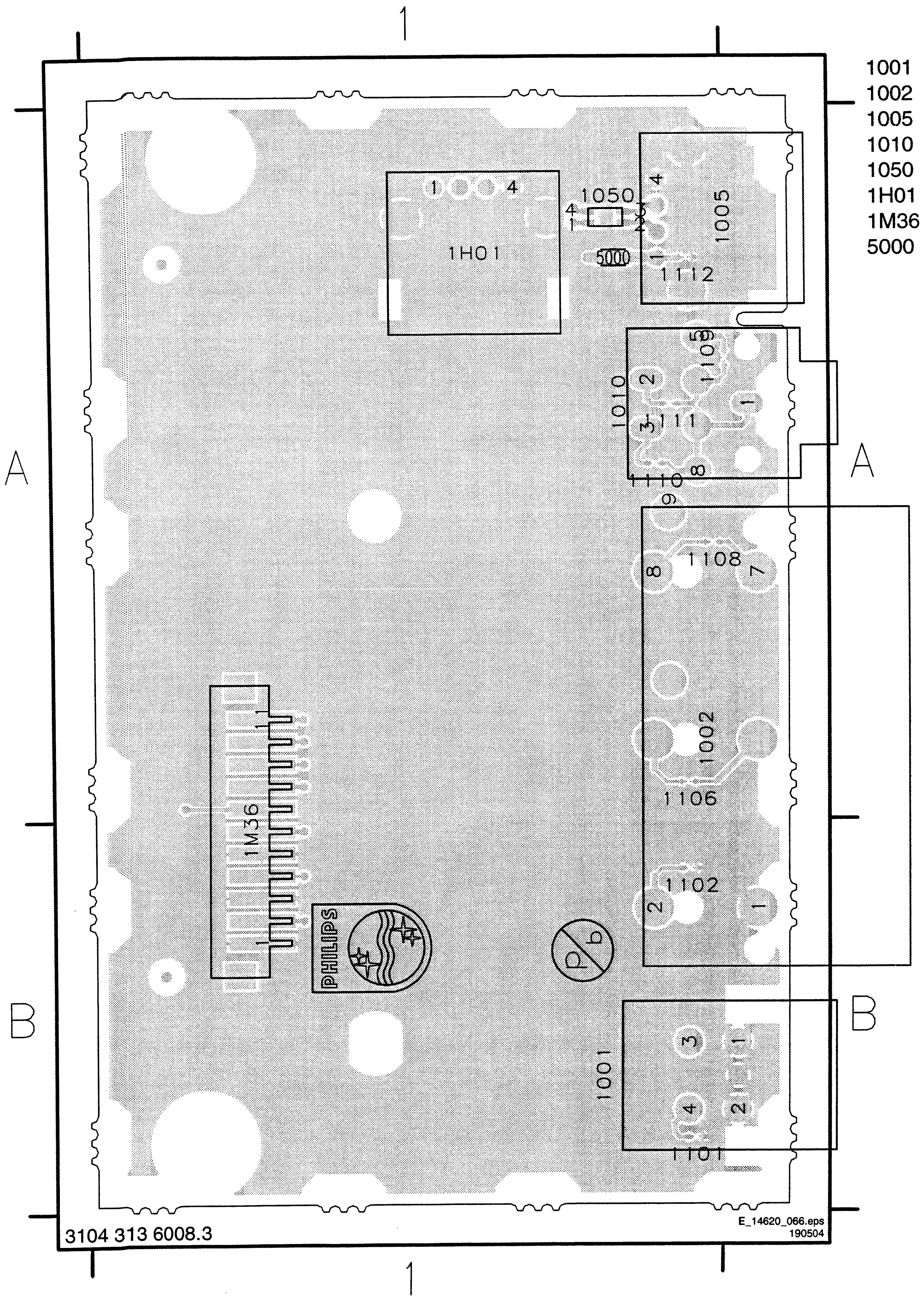
6022	C1
6025	B1
6027	B1
6029	B1
6030	B1
6031	D1
6032	B1
6033	E1
6034	D1
6035	D1
6036	D1
6037	D1
7007	D1
7008	C1
7009	B1
7011	B1
7015	D1
7024	E1
7025	E1
9001	C1
9002	C1
9015	D1
9040	D1
9041	D1

Side I/O Panel


D
SIDE I/O
JAGUAR ONLY
TO 1H01
B6A
VIPER
USB
CONNECTOR
1H01
OR
1M60
D-
D+
1005
5000
1050
DLW31S
F012
F013
F014
F015
F016
F017
1112
SVHS
1001
C
Y / CVBS
F001
F002
F003
F020
CVBS
1002-1
YELLOW
1101
1102
6000
6001
6002
6003
PDZ6.8-B
I004
I009
3000
75R
3004
75R
L
1002-2
WHITE
R
1002-3
RED
F004
GND_AUD
F005
9004
I001
9005
I003
F006
1106
1108
6004
6005
6006
6007
I002
I010
2004
680p
2006
680p
3009
1K0
3012
1K0
3010
33K
3013
33K
2005
100p
2007
100p
F022
F021
F023
3011
3K9
3008
2K2
2003
1u0
RES
9003
DETECT
SOUND L-HEADPHONE-OUT
SOUND R-HEADPHONE-OUT
1M36
Y
C
GNDB
TO 1M36
B21
SSB EMGT
OR
TO 1M36
H
SCART 3 EMGT
OR
TO 1M36
B10
SSB JAGUAR
HEADPHONE-OUT
1010
F007
F008
F009
F019
1109
1111
1110
2010
22n
2008
22n
6010
6011
6008
6009
I014
I013
I007
I005
9011
9010
9009
9008
I008
I006
3020
10K
3016
10K
2011
10n
2009
10n
F025
F024
9006
9007
I011
F018
I012
3999
150R
F010
F011
3104 313 6008.3
E_14620_065.eps
190504

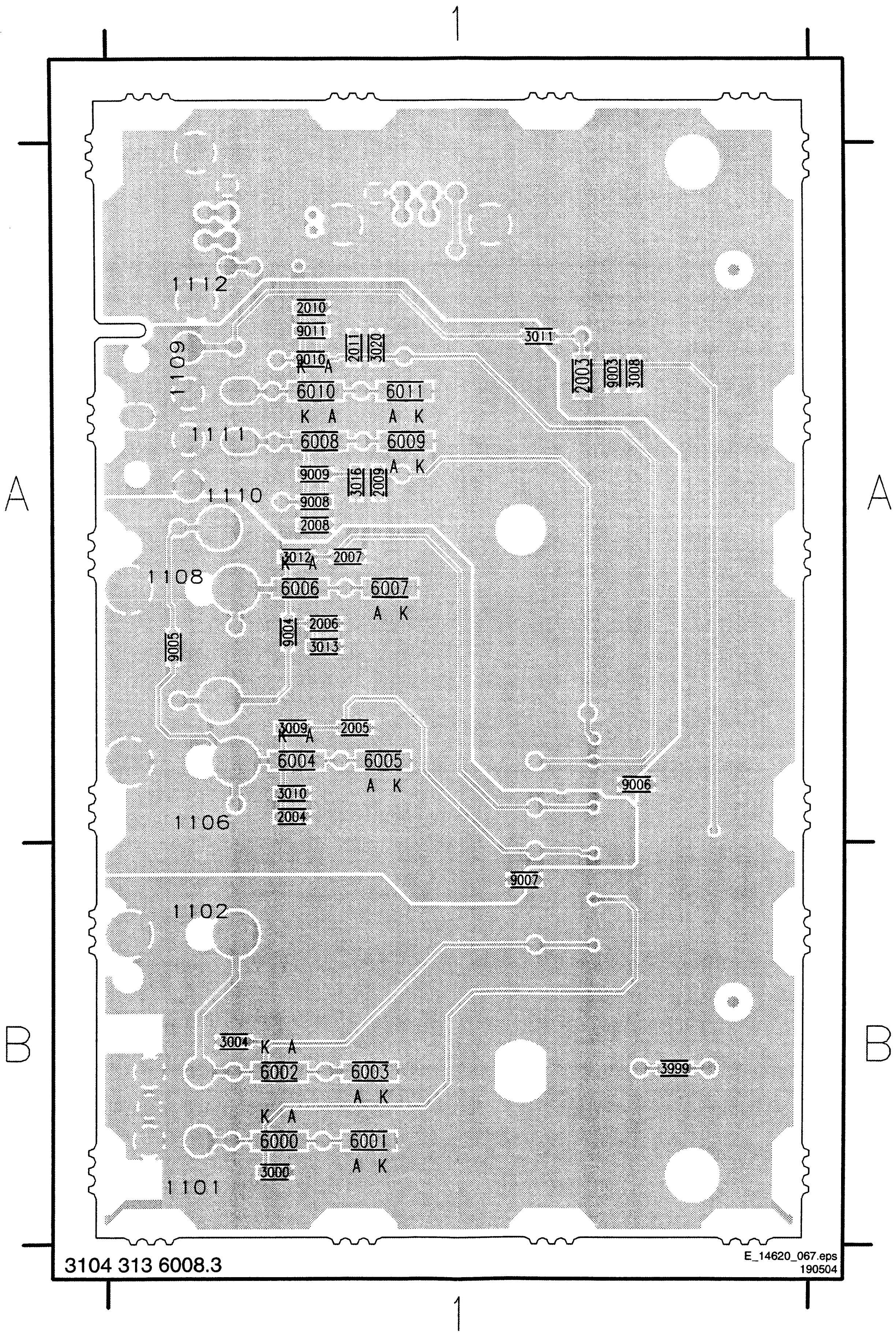
1001	B1
1002-1	B1
1002-2	C1
1002-3	D1
1005	A7
1010	E1
1050	A6
1101	A2
1102	B2
1106	C2
1108	D2
1109	E2
1110	F2
1111	E2
1112	A7
1H01	A6
1M36	B8
2003	C5
2004	C3
2005	C4
2006	D3
2007	D4
2008	F2
2009	F4
2010	E2
2011	E4
3000	A3
3004	B3
3008	C5
3009	C4
3010	C3
3011	C4
3012	D4
3013	D3
3016	F4
3020	E4
3999	F8
5000	A6
6000	A3
6001	A3
6002	B3
6003	B3
6004	C3
6005	C3
6006	D3
6007	D3
6008	F3
6009	F3
6010	E3
6011	F3
9003	C5
9004	C2
9005	D1
9006	F7
9007	F7
9008	F4
9009	F4
9010	E4
9011	E4
F001	A2
F002	A2
F003	B1
F004	C2
F005	C2
F006	D2
F007	E1
F008	E2
F009	E1
F010	F8
F011	F8
F012	A6
F013	A7
F014	A6
F015	A7
F016	A6
F017	A7
F018	F7
F019	F2
F020	B3
F021	C6
F022	C6
F023	C6
F024	E6
F025	E5
I001	C1
I002	C3
I003	D2
I004	A3
I005	F3
I006	F4
I007	E3
I008	E4
I009	B3
I010	D3
I011	F7
I012	F7
I013	F3
I014	E3

Layout Side I/O Panel (Top Side)


1
A
B
1H01
1 4
1050
5000
1005
1112
1010
1109
1111
1110
1108
1002
1106
1102
1M36
PHILIPS
1001
1101
3104 313 6008.3
E_14620_066.eps
190504

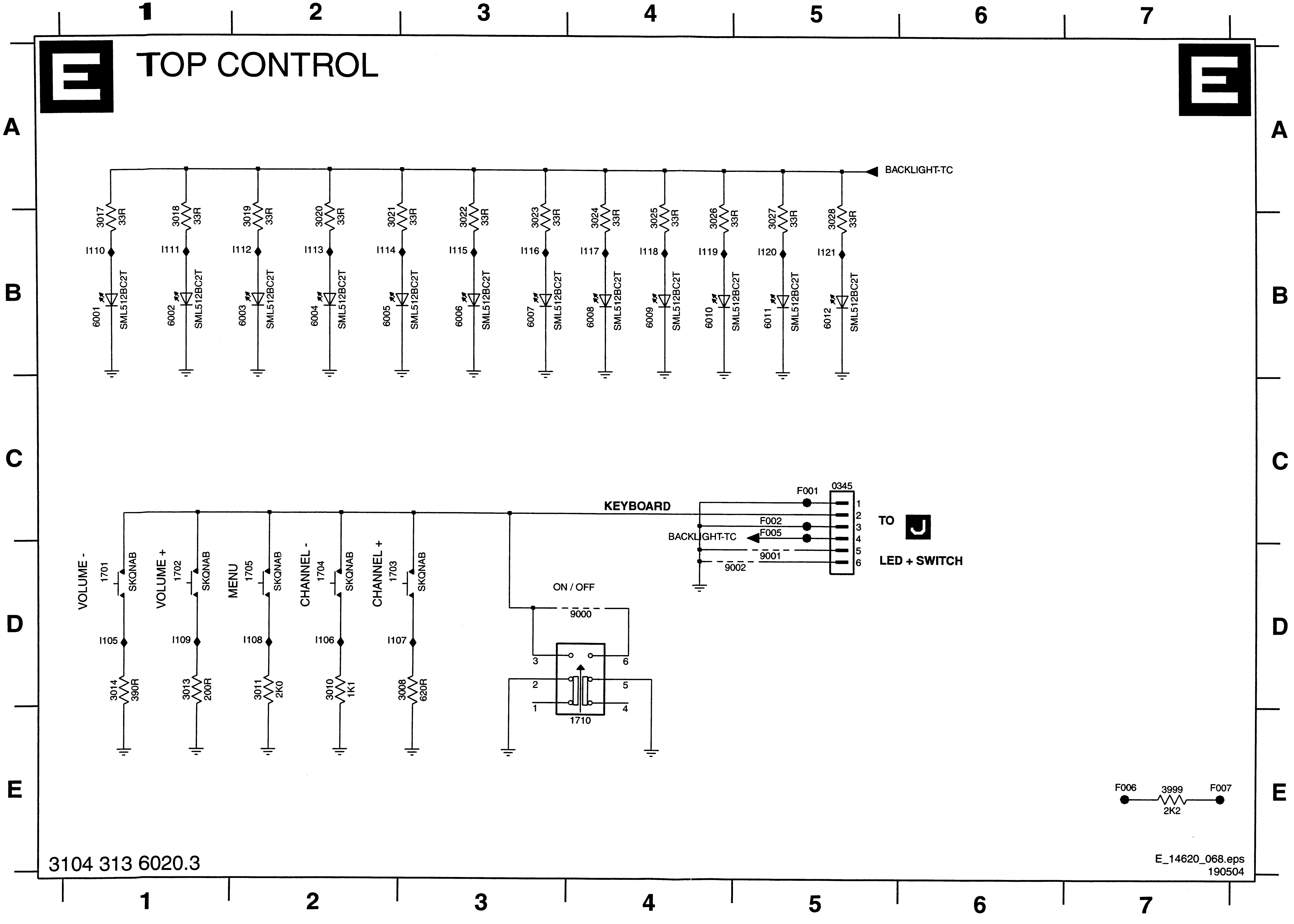
1001	B1
1002	A1
1005	A1
1010	A1
1050	A1
1H01	A1
1M36	B1
5000	A1

Layout Side I/O Panel (Bottom Side)


1
A
B
1112
1109
1111
1110
1108
1106
1102
1101
2010
9011
9010
2011
3020
3011
2003
9003
3008
6010
6011
6008
6009
9009
9008
2008
3016
2009
3012
2007
6006
6007
9005
9004
2006
3013
3009
2005
6004
6005
3010
2004
9006
9007
3004
6002
6003
3999
6000
6001
3000
K A
A K
3104 313 6008.3
E_14620_067.eps
190504

2003	A1
2004	A1
2005	A1
2006	A1
2007	A1
2008	A1
2009	A1
2010	A1
2011	A1
3000	B1
3004	B1
3008	A1
3009	A1
3010	A1
3011	A1
3012	A1
3013	A1
3016	A1
3020	A1
3999	B1
6000	B1
6001	B1
6002	B1
6003	B1
6004	A1
6005	A1
6006	A1
6007	A1
6008	A1
6009	A1
6010	A1
6011	A1
9003	A1
9004	A1
9005	A1
9006	A1
9007	B1
9008	A1
9009	A1
9010	A1
9011	A1

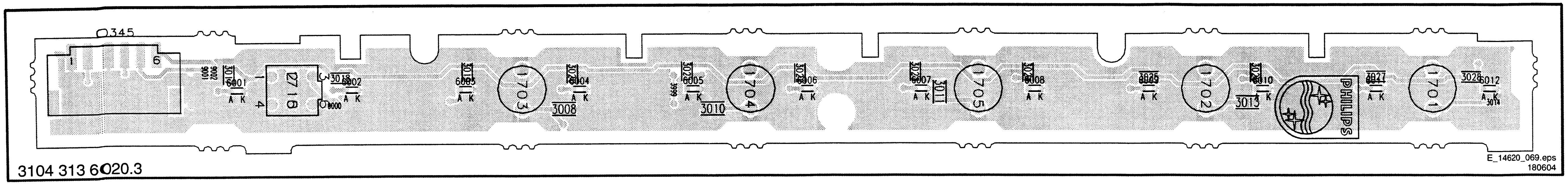
Top Control Panel


E
TOP CONTROL
E
1
2
3
4
5
6
7
A
B
C
D
E
BACKLIGHT-TC
3017 33R
3018 33R
3019 33R
3020 33R
3021 33R
3022 33R
3023 33R
3024 33R
3025 33R
3026 33R
3027 33R
3028 33R
I110
I111
I112
I113
I114
I115
I116
I117
I118
I119
I120
I121
6001 SML512BC2T
6002 SML512BC2T
6003 SML512BC2T
6004 SML512BC2T
6005 SML512BC2T
6006 SML512BC2T
6007 SML512BC2T
6008 SML512BC2T
6009 SML512BC2T
6010 SML512BC2T
6011 SML512BC2T
6012 SML512BC2T
KEYBOARD
F001
0345
F002
F005
BACKLIGHT-TC
9001
9002
1
2
3
4
5
6
TO
J
LED + SWITCH
VOLUME -
1701 SKQNAB
VOLUME +
1702 SKQNAB
MENU
1705 SKQNAB
CHANNEL -
1704 SKQNAB
CHANNEL +
1703 SKQNAB
I105
I109
I108
I106
I107
3014 390R
3013 200R
3011 2K0
3010 1K1
3008 620R
ON / OFF
9000
3
6
2
5
1
4
1710
F006
3999
2K2
F007
3104 313 6020.3
E_14620_068.eps
190504

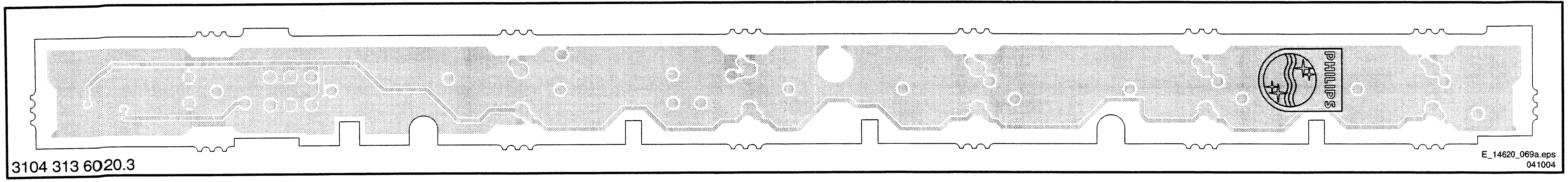
0345	C5
1701	D1
1702	D1
1703	D2
1704	D2
1705	D2
1710	E4
3008	D3
3010	D2
3011	D2
3013	D1
3014	D1
3017	B1
3018	B1
3019	B2
3020	B2
3021	B2
3022	B3
3023	B3
3024	B4
3025	B4
3026	B4
3027	B5
3028	B5
3999	E7
6001	B1
6002	B1
6003	B2
6004	B2
6005	B2
6006	B3
6007	B3
6008	B4
6009	B4
6010	B4
6011	B5
6012	B5
9000	D4
9001	D5
9002	D5
F001	C5
F002	C5
F005	C5
F006	E7
F007	E7
I105	D1
I106	D2
I107	D2
I108	D2
I109	D1
I110	B1
I111	B1
I112	B2
I113	B2
I114	B2
I115	B3
I116	B3
I117	B4
I118	B4
I119	B4
I120	B5
I121	B5

Layout Top Control Panel (Top Side)

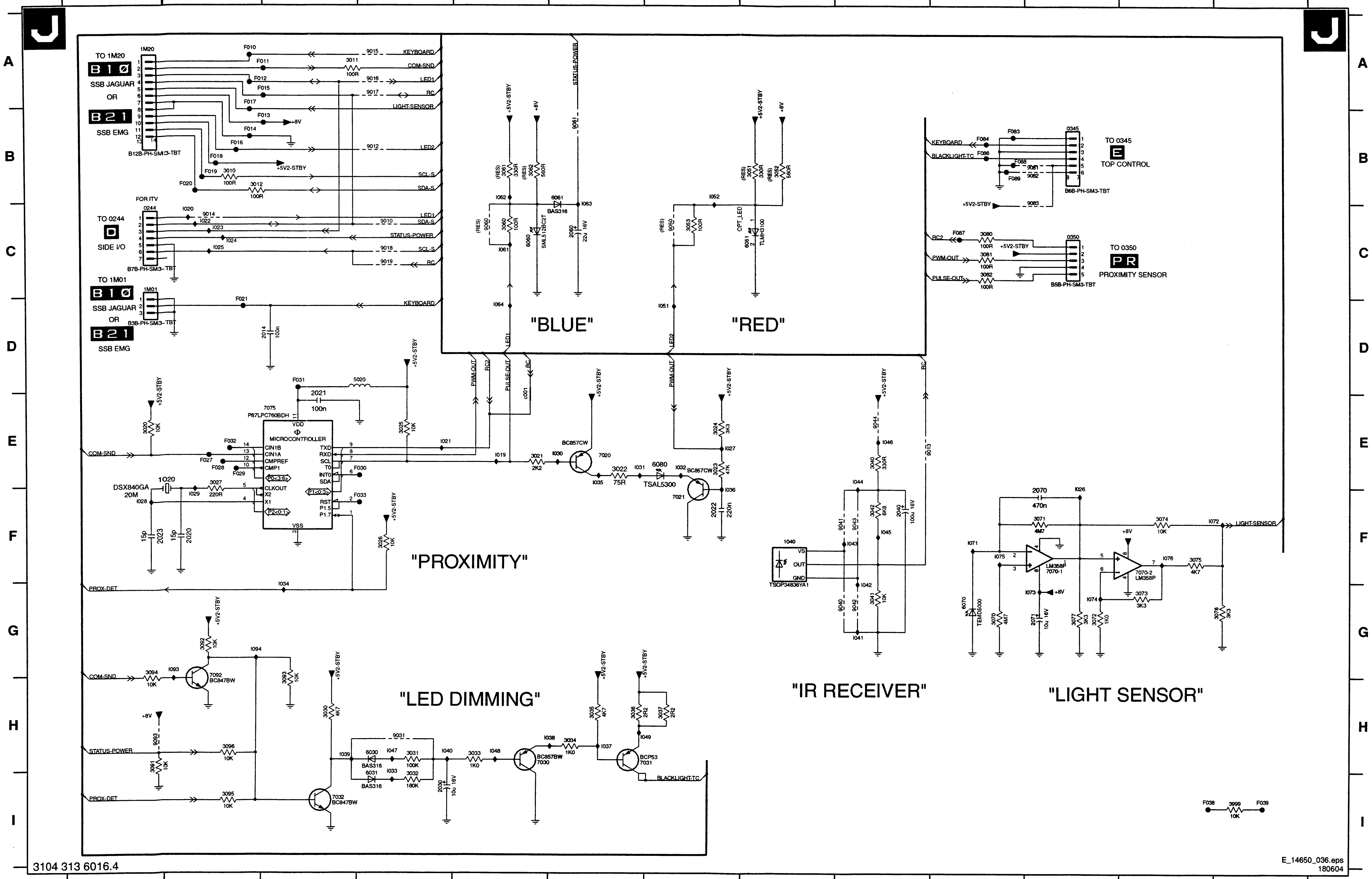
0345
1701
1702
1703
1704
1705
1710
3008
3010
3011
3013
3014
3017
3018
3019
3020
3021
3022
3023
3024
3025
3026
3027
3028
3999
6001
6002
6003
6004
6005
6006
6007
6008
6009
6010
6011
6012
9000
9001
9002


0345
1
6
3011
9002
9001
6001
A K
7116
1
4
3
3018
6002
9000
A K
3017
6003
A K
1703
3021
6004
A K
3008
3022
3999
6005
A K
3010
1704
3023
6006
A K
3024
6007
A K
3011
1705
3025
6008
A K
3026
6009
A K
1702
3019
6010
K
3013
PHILIPS
3027
6011
A K
1701
3028
6012
A K
3014
3104 313 6020.3
E_14620_069.eps
180604

Layout Top Control Panel (Bottom Side)

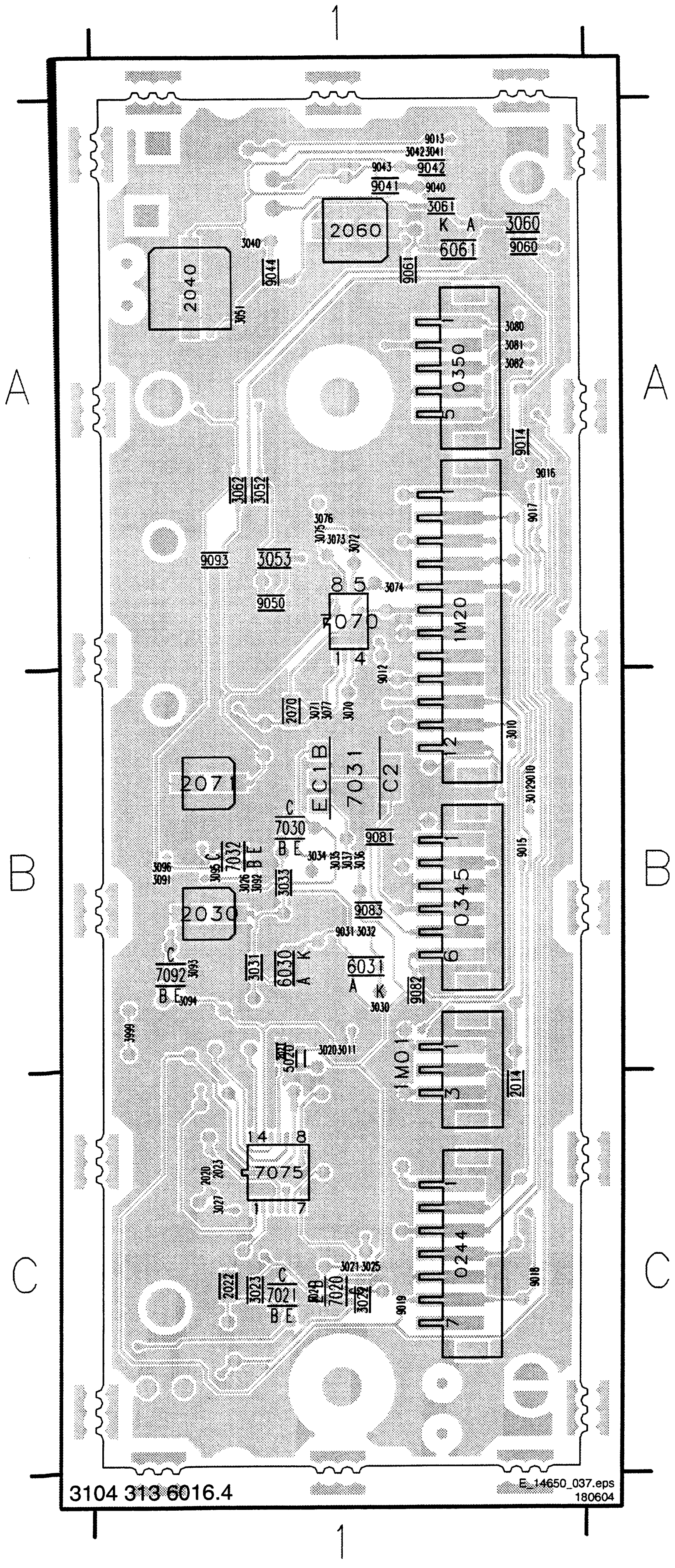

PHILIPS
3104 313 6020.3
E_14620_069a.eps
041004

LED and Switch Panel


J
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
TO 1M20
B10
SSB JAGUAR
OR
B21
SSB EMG
1M20
B12B-PH-SM3-TBT
TO 0244
D
SIDE I/O
B7B-PH-SM3-TBT
TO 1M01
B10
SSB JAGUAR
OR
B21
SSB EMG
1M01
B3B-PH-SM3-TBT
KEYBOARD
COM-SND
LED1
RC
LIGHT-SENSOR
LED2
SCL-S
SDA-S
STATUS-POWER
+8V
+5V2-STBY
"BLUE"
"RED"
SML512BC2T
BAS316
TLMH3100
OPT_LED
TO 0345
E
TOP CONTROL
B6B-PH-SM3-TBT
BLACKLIGHT-TC
TO 0350
PR
PROXIMITY SENSOR
B5B-PH-SM3-TBT
PWM-OUT
PULSE-OUT
RC2
"PROXIMITY"
7075
P87LPC760BDH
MICROCONTROLLER
VDD
VSS
CIN1B
CIN1A
CMPREF
CMP1
CLKOUT
X2
X1
TXD
RXD
SCL
T0
INT0
SDA
RST
P1.5
P1.7
DSX840GA
20M
1020
5020
2021
100n
PROX-DET
BC857CW
7020
3022
75R
6080
TSAL5300
7021
2022
220n
"IR RECEIVER"
1040
TSOP34836YA1
VS
OUT
GND
"LIGHT SENSOR"
2070
470n
LM358P
7070-1
7070-2
6070
TEMD5000
"LED DIMMING"
7092
BC847BW
7032
BC847BW
BAS316
7030
BC857BW
7031
BCP53
3999
10K
3104 313 6016.4
E_14650_036.eps
180604

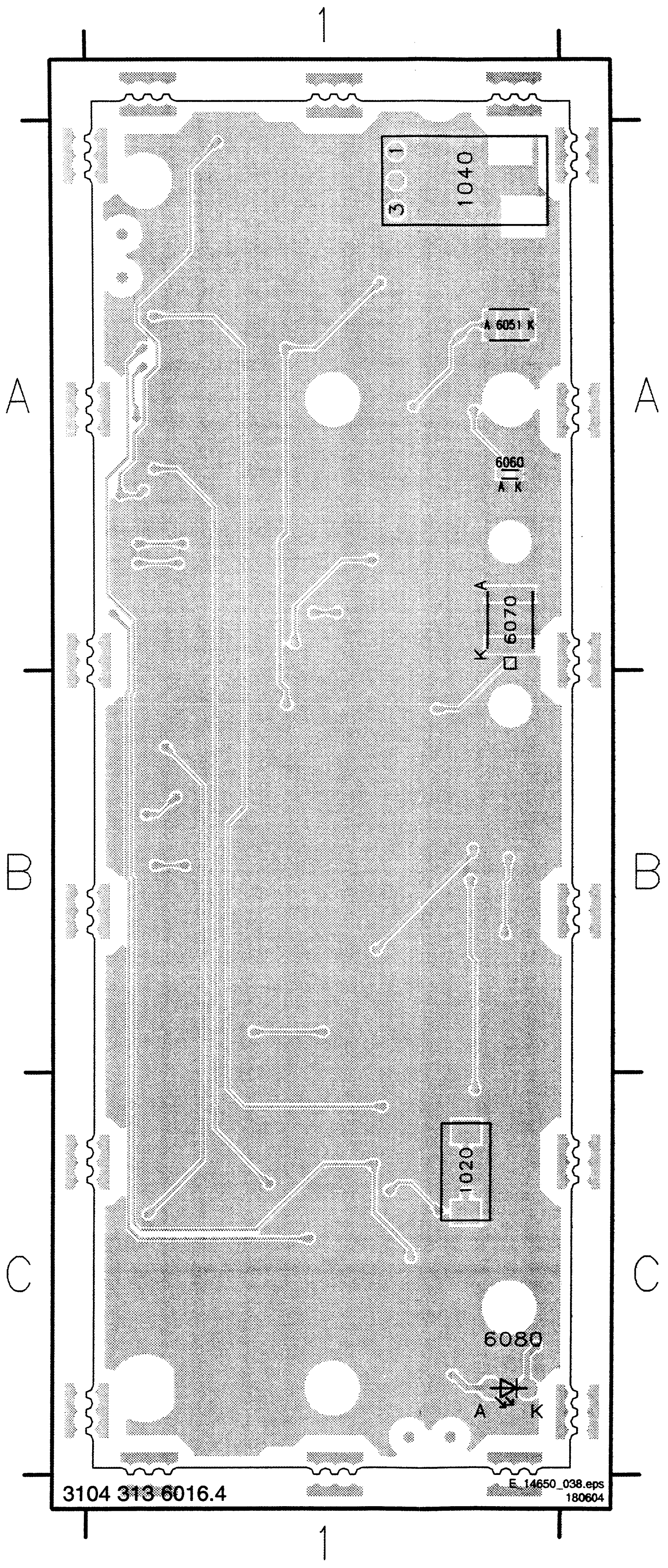
0244	C1
0345	B11
0350	C11
1020	E2
1040	F8
1M01	C1
1M20	A1
2014	D3
2020	F2
2021	E3
2022	F7
2023	F1
2030	I4
2040	F9
2060	C6
2070	F11
2071	G11
3010	B2
3011	A3
3012	B2
3020	E1
3021	E5
3022	E6
3023	E7
3024	E7
3025	E4
3026	F4
3027	E2
3030	H3
3031	H4
3032	I4
3033	H5
3034	H6
3035	H6
3036	H6
3037	H7
3040	E9
3041	G9
3042	F9
3051	B8
3052	B8
3053	C7
3060	C5
3061	B5
3062	B5
3070	G10
3071	F11
3072	G11
3073	G12
3074	F12
3075	F12
3076	G13
3077	G11
3080	C10
3081	C10
3082	C10
3091	H1
3092	G2
3093	H3
3094	G1
3095	I2
3096	H2
3999	I13
5020	D4
6030	H4
6031	I4
6051	C8
6060	C5
6061	B6
6070	G10
6080	E7
7020	E6
7021	F7
7030	H5
7031	H6
7032	I3
7070-1	F11
7070-2	F12
7075	E3
7092	H2
9010	C4
9012	B4
9013	E9
9014	C2
9015	A4
9016	A4
9017	A4
9018	C4
9019	C4
9031	H4
9040	G9
9041	F9
9042	G9
9043	F9
9044	E9
9050	C7
9060	C5
9061	B6
9081	B11
9082	B11
9083	C11
9093	H1
F010	A2
F011	A3
F012	A2
F013	B3
F014	B2
F015	A3
F016	B2
F017	A2
F018	B2
F019	B2
F020	B2
F021	D2
F027	E2
F028	E2
F029	E2
F030	E4
F031	D3
F032	E2
F033	F4
F038	I12
F039	I13
F083	B10
F084	B10
F086	B10
F087	C10
F088	B10
F089	B10
I019	E5
I020	C2
I021	E4
I022	C2
I023	C2
I024	C2
I025	C2
I026	F11
I027	E7
I028	F1
I029	F2
I030	E6
I031	E6
I032	E7
I033	I4
I034	G3
I035	E6
I036	F7
I037	H6
I038	H6
I039	H3
I040	H4
I041	G9
I042	G9
I043	F9
I044	E9
I045	F9
I046	E9
I047	H4
I048	H5
I049	H7
I051	D7
I052	B7
I061	C5
I062	B5
I063	C6
I064	D5
I071	F10
I072	F12
I073	G11
I074	G11
I075	F10
I076	F12
I093	G2
I094	G2
c001	E5

Layout LED and Switch Panel (Top Side)


1
A
B
C
2060
2040
2071
2030
7070
7031
EC1B
C2
7030
7032
7092
7075
7021
7020
0350
1M20
0345
1M01
0244
2014
6061
6031
6030
3060
9060
9093
3053
9050
3062
3052
9081
9083
9082
9041
9042
9044
9061
9014
K A
A K
B E
3104 313 6016.4
E_14650_037.eps
180604

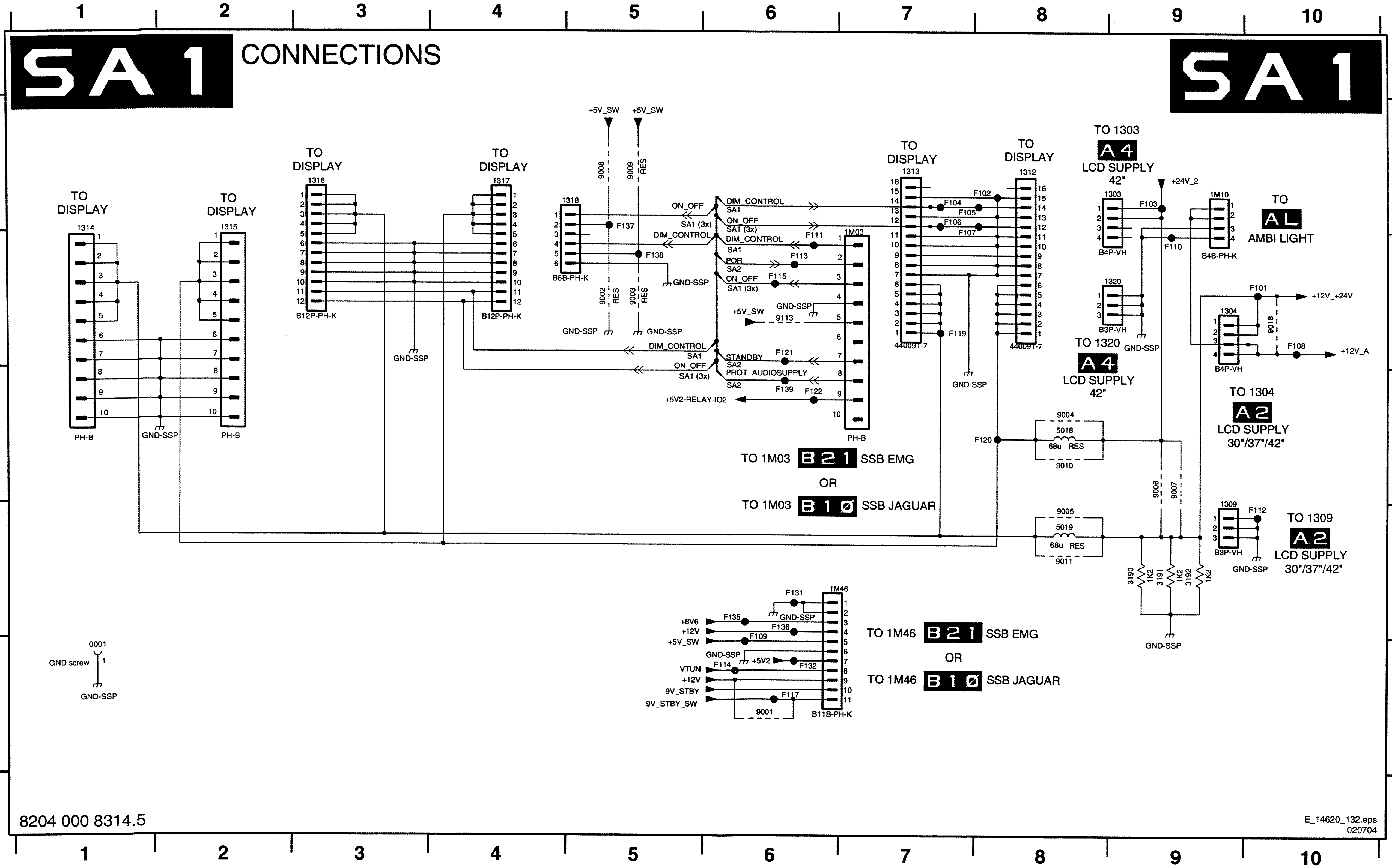
0244	C1
0345	B1
0350	A1
1040	A1
1M01	B1
1M20	A1
2014	C1
2020	C1
2021	B1
2022	C1
2023	C1
2030	B1
2040	A1
2060	A1
2070	B1
2071	B1
3010	B1
3011	B1
3012	B1
3020	B1
3021	C1
3022	C1
3023	C1
3024	C1
3025	C1
3026	B1
3027	C1
3030	B1
3031	B1
3032	B1
3033	B1
3034	B1
3035	B1
3036	B1
3037	B1
3040	A1
3041	A1
3042	A1
3051	A1
3052	A1
3053	A1
3060	A1
3061	A1
3062	A1
3070	B1
3071	B1
3072	A1
3073	A1
3074	A1
3075	A1
3076	A1
3077	B1
3080	A1
3081	A1
3082	A1
3091	B1
3092	B1
3093	B1
3094	B1
3095	B1
3096	B1
3999	B1
5020	B1
6030	B1
6031	B1
6061	A1
6080	C1
7020	C1
7021	C1
7030	B1
7031	B1
7032	B1
7070	A1
7075	C1
7092	B1
9010	B1
9012	B1
9013	A1
9014	A1
9015	B1
9016	A1
9017	A1
9018	C1
9019	C1
9031	B1
9040	A1
9041	A1
9042	A1
9043	A1
9044	A1
9050	A1
9060	A1
9061	A1
9081	B1
9082	B1
9083	B1
9093	A1

Layout LED and Switch Panel (Bottom Side)


1
A
B
C
1040
1
3
A 6051 K
6060
A K
6070
A
K
1020
6080
A K
3104 313 6016.4
E_14650_038.eps
180604

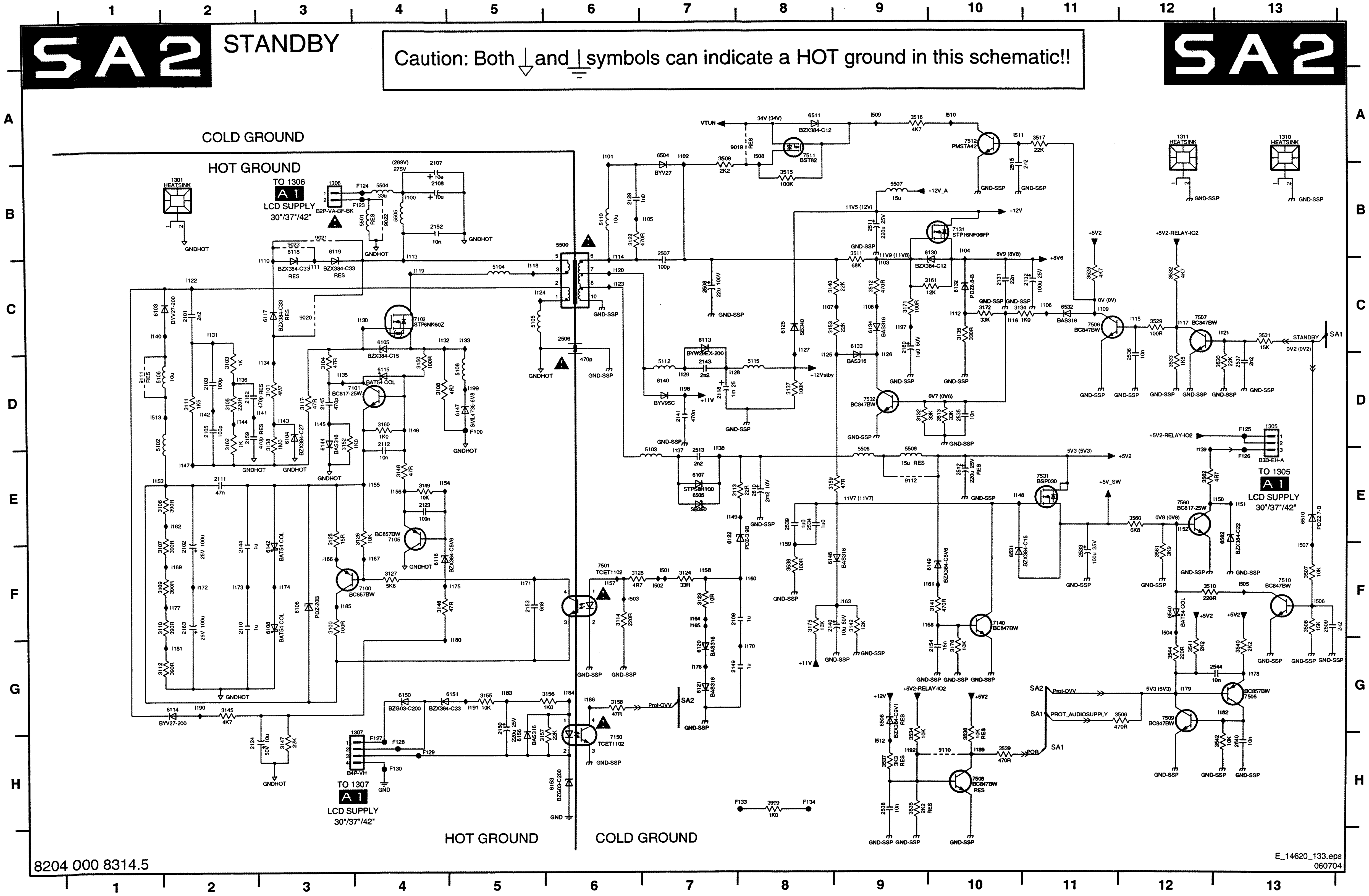
1020	C1
1040	A1
6051	A1
6060	A1
6070	A1
6080	C1

LCD Standby Audio Panel: Connections


SA1
CONNECTIONS
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
TO DISPLAY
1314
1315
PH-B
GND-SSP
TO DISPLAY
1316
B12P-PH-K
1317
B12P-PH-K
1318
B6B-PH-K
+5V_SW
9008
9009 RES
9002 RES
9003 RES
F137
F138
ON_OFF
SA1 (3x)
DIM_CONTROL
DIM_CONTROL
SA1
ON_OFF
SA1 (3x)
POR
SA2
STANDBY
SA2
PROT_AUDIOSUPPLY
+5V2-RELAY-IO2
F111
F113
F115
F121
F122
F139
9113
1M03
PH-B
TO 1M03 B21 SSB EMG
OR
TO 1M03 B10 SSB JAGUAR
TO DISPLAY
1313
440091-7
1312
440091-7
F102
F104
F105
F106
F107
F119
F120
TO 1303 A4 LCD SUPPLY 42"
1303
B4P-VH
+24V_2
F103
F110
1M10
B4B-PH-K
TO AL AMBI LIGHT
1320
B3P-VH
TO 1320 A4 LCD SUPPLY 42"
1304
B4P-VH
F101
+12V_+24V
9018
F108
+12V_A
TO 1304 A2 LCD SUPPLY 30"/37"/42"
9004
5018
68u RES
9010
9005
5019
68u RES
9011
9006
9007
3190 1K2
3191 1K2
3192 1K2
1309
B3P-VH
F112
TO 1309 A2 LCD SUPPLY 30"/37"/42"
1M46
B11B-PH-K
F131
F135
F136
F109
F114
F132
F117
9001
+8V6
+12V
+5V_SW
GND-SSP
+5V2
VTUN
+12V
9V_STBY
9V_STBY_SW
TO 1M46 B21 SSB EMG
OR
TO 1M46 B10 SSB JAGUAR
0001
GND screw
8204 000 8314.5
E_14620_132.eps
020704

0001	E1
1303	A9
1304	B9
1309	D9
1312	A8
1313	A7
1314	B1
1315	B2
1316	A3
1317	A4
1318	A5
1320	B9
1M03	B7
1M10	A9
1M46	D7
3190	D9
3191	D9
3192	D9
5018	C8
5019	D8
9001	E6
9002	B5
9003	B5
9004	C8
9005	D8
9006	C9
9007	C9
9008	A5
9009	A5
9010	C8
9011	D8
9018	B10
9113	B6
F101	B10
F102	A8
F103	A9
F104	A7
F105	A7
F106	A7
F107	B7
F108	B10
F109	E6
F110	B9
F111	B6
F112	D10
F113	B6
F114	E6
F115	B6
F117	E6
F119	B7
F120	C8
F121	B6
F122	C6
F131	D6
F132	E6
F135	D6
F136	D6
F137	A5
F138	B5
F139	C6

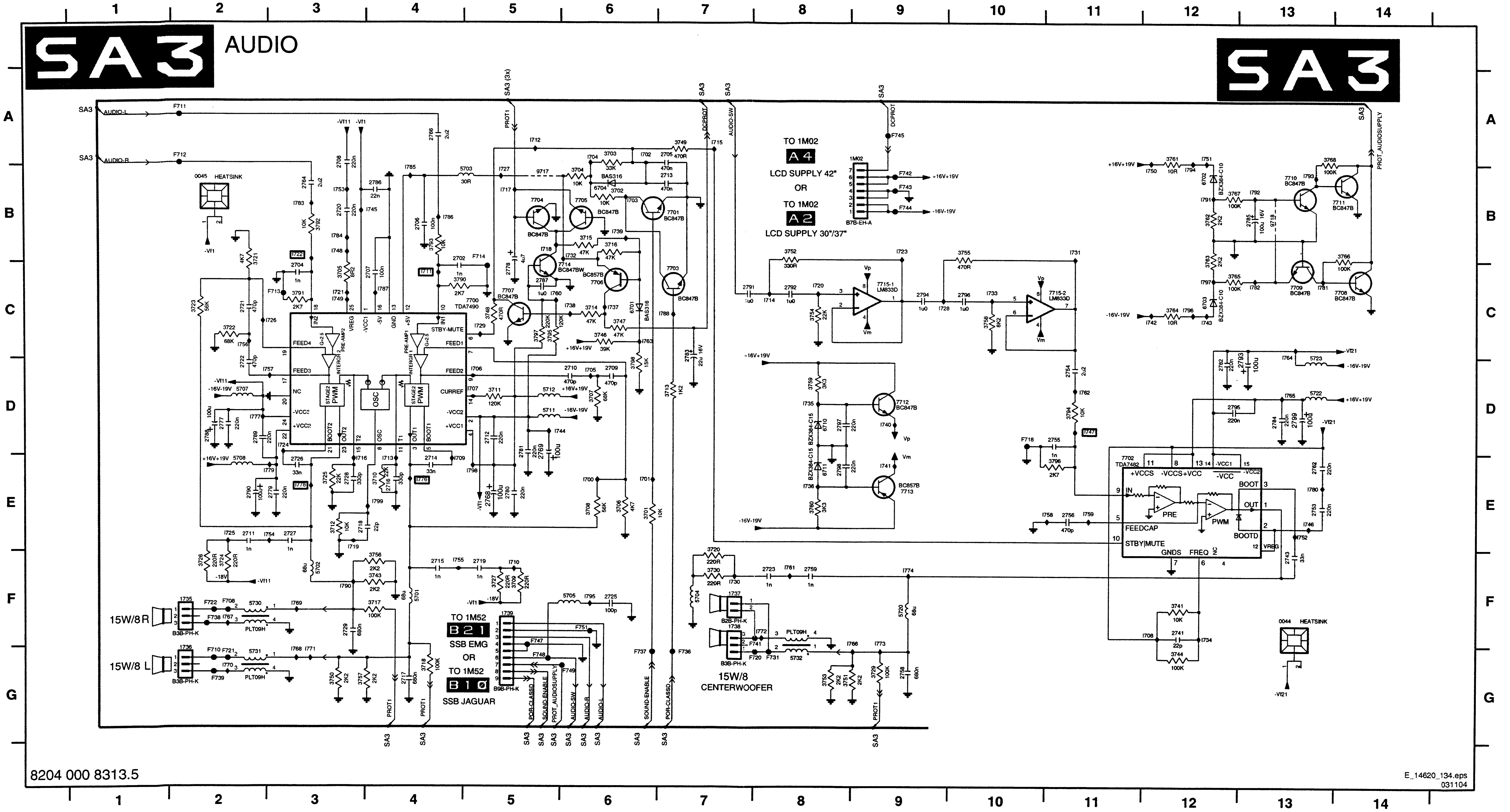
LCD Standby Audio Panel: Standby


SA2
STANDBY
Caution: Both and symbols can indicate a HOT ground in this schematic!!
SA2
COLD GROUND
HOT GROUND
TO 1306
A1
LCD SUPPLY
30"/37"/42"
TO 1305
A1
LCD SUPPLY
30"/37"/42"
TO 1307
A1
LCD SUPPLY
30"/37"/42"
HEATSINK
STANDBY
SA1
Prot-OVV
PROT_AUDIOSUPPLY
POR
+5V2
+5V2-RELAY-IO2
+12V
+8V6
+12Vstby
+5V_SW
VTUN
GNDHOT
GND-SSP
HOT GROUND
COLD GROUND
8204 000 8314.5
E_14620_133.eps
060704
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H

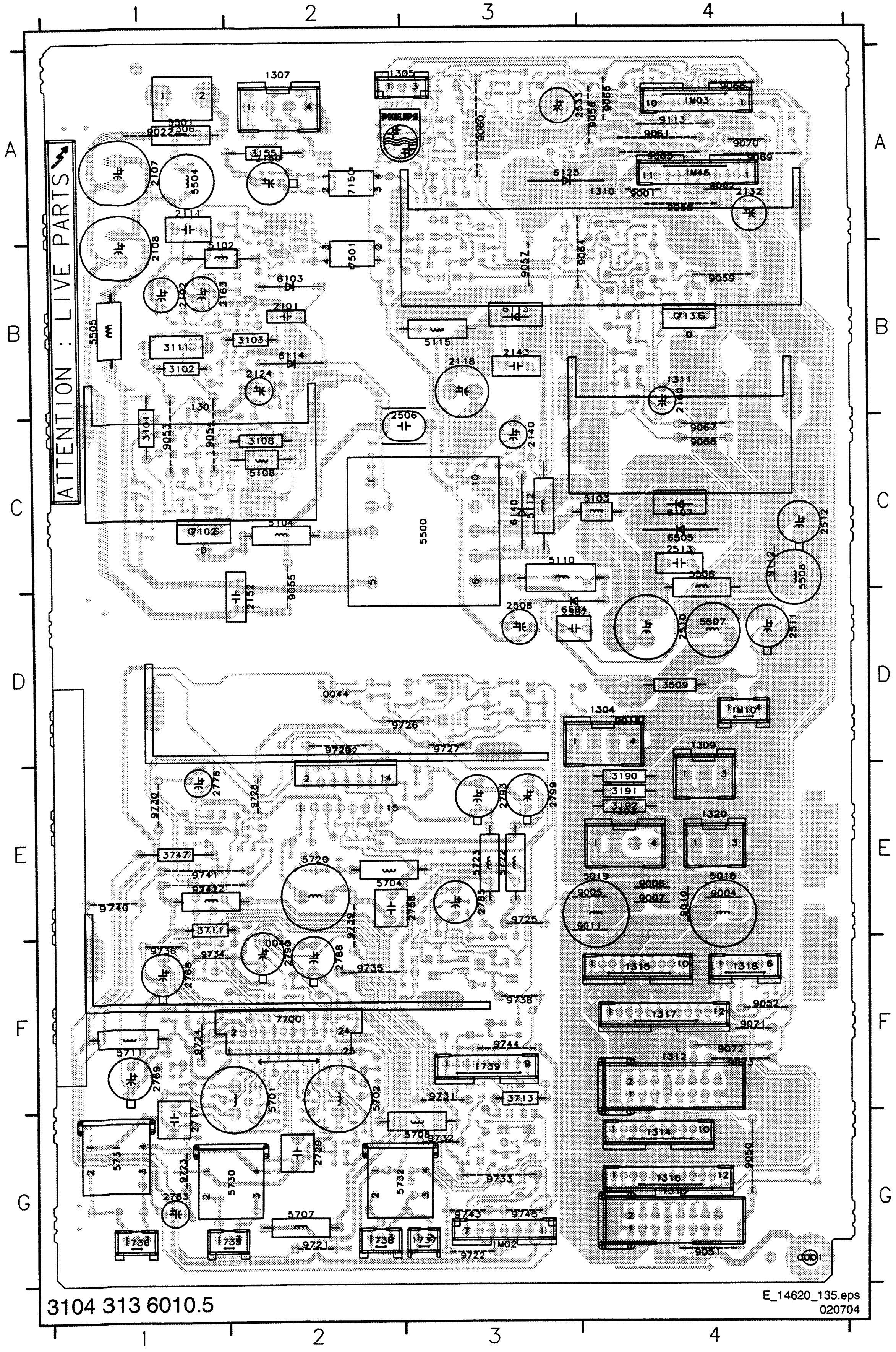
1301	B2
1305	D13
1306	B3
1307	H4
1310	A13
1311	A12
2101	C2
2102	F2
2103	D2
2105	D2
2107	A4
2108	B4
2109	F7
2110	F2
2111	E2
2112	D4
2118	D7
2123	E4
2124	H2
2129	B6
2131	C10
2132	C11
2140	F8
2141	D7
2143	D7
2144	F2
2145	D3
2149	G7
2150	G5
2152	B4
2153	F5
2154	G10
2159	D2
2160	C9
2162	D2
2163	F2
2506	C6
2507	B7
2508	C7
2509	F13
2510	E8
2511	B9
2512	E10
2513	E7
2515	B10
2533	F11
2534	E8
2535	D10
2536	D12
2537	D13
2538	H9
2539	E8
2540	H13
2544	G13
3100	F3
3101	D3
3102	D2
3103	D2
3104	D3
3105	D2
3106	E1
3107	F1
3108	D4
3109	F1
3110	F1
3111	D2
3112	G1
3113	E7
3114	F6
3117	D3
3122	B6
3123	F7
3124	F7
3125	E3
3126	E4
3127	F4
3128	F6
3132	D9
3134	C10
3135	C10
3137	D8
3138	D3
3140	C8
3141	F10
3142	F9
3145	G2
3146	F4
3147	H3
3148	E4
3149	E4
3150	D4
3152	D3
3153	C8
3155	G5
3156	G6
3157	H5
3158	G6
3159	E8
3160	D4
3161	C10
3171	C9
3172	C10
3175	F8
3176	G10
3506	G12
3507	F13
3508	F13
3509	A7
3510	F12
3511	B9
3512	C9
3513	D10
3515	B8
3516	A9
3517	A11
3528	C11
3529	C12
3530	D13
3531	C13
3532	C12
3533	D12
3534	H9
3535	H9
3536	H10
3537	H9
3538	F8
3539	H10
3540	G13
3541	G12
3542	H13
3544	G12
3560	E12
3561	F12
3562	E12
3999	H8
5102	D1
5103	E7
5104	C5
5105	C5
5106	D1
5108	D5
5110	B6
5112	D7
5115	D8
5500	B6
5501	B4
5504	B4
5505	B4
5506	E9
5507	B9
5508	E9
6103	C1
6104	D3
6105	C4
6106	F3
6107	E7
6108	F3
6113	C7
6114	G2
6115	D4
6116	F4
6117	C3
6118	B3
6119	B3
6120	G7
6121	G7
6122	E7
6125	C8
6130	B10
6132	C10
6133	C9
6134	C9
6140	D7
6142	F3
6144	D3
6147	D5
6148	F8
6149	F9
6150	G4
6151	G5
6153	H6
6156	H5
6504	A7
6505	E7
6508	G9
6510	E13
6511	A8
6531	F10
6532	C11
6540	F12
6562	E13
7100	F4
7101	D4
7102	C4
7105	E4
7131	B10
7140	F10
7150	H6
7501	F6
7505	G13
7506	C11
7507	C12
7508	H10
7509	G12
7510	F13
7511	A8
7512	A10
7531	E11
7532	D9
7560	E12
9019	A8
9020	C3
9021	B3
9022	B4
9023	B3
9110	H10
9111	D1
9112	E9
F100	D5
F123	B4
F124	B4
F125	D13
F126	E13
F127	H4
F128	H4
F129	H4
F130	H4
F133	H8
F134	H8
I100	B4
I101	A6
I102	A7
I103	C9
I104	B10
I105	B7
I106	C11
I107	C8
I108	C9
I109	C11
I110	C3
I111	C3
I112	C10
I113	B4
I114	B6
I115	C12
I116	C10
I117	C12
I118	C5
I119	C4
I120	C6
I121	C13
I122	C2
I123	C6
I124	C5
I125	D8
I126	D9
I127	C8
I128	D7
I129	D7
I130	C4
I131	C2
I132	C4
I133	C5
I134	D3
I135	D3
I136	D2
I137	E7
I138	E7
I139	E12
I140	C1
I141	D3
I142	D2
I143	D3
I144	D2
I145	D3
I146	D4
I147	E2
I148	E10
I149	E7
I150	E13
I151	E13
I152	E12
I153	E1
I154	E4
I155	E4
I156	E4
I157	F6
I158	F7
I159	F8
I160	F8
I161	F9
I162	E2
I163	F9
I164	F7
I165	F7
I166	F3
I167	F4
I168	F9
I169	F2
I170	G8
I171	F5
I172	F2
I173	F2
I174	F3
I175	F5
I176	G7
I177	F2
I178	G13
I179	G12
I180	G5
I181	G2
I182	G13
I183	G5
I184	G6
I185	F3
I186	G6
I189	H10
I190	G2
I191	G5
I192	H9
I197	C9
I198	D7
I199	D5
I501	F7
I502	F7
I503	F6
I504	F12
I505	F13
I506	F13
I507	F13
I508	A8
I509	A9
I510	A10
I511	A10
I512	H9
I513	D1

LCD Standby Audio Panel: Audio

0044	F13
0045	B2
1735	F2
1736	G2
1737	F7
1738	F7
1739	F5
1M02	A9
2702	C4
2704	C3
2705	A7
2706	B4
2707	C4
2708	A3
2709	D6
2710	D6
2711	E2
2712	D5
2713	B7
2714	E4
2715	F4
2716	E4
2717	G4
2718	E3
2719	F5
2720	B3
2721	C2
2722	D2
2723	F8
2725	F6
2726	E3
2727	E3
2728	E3
2729	F3
2741	F12
2743	F13
2753	E13
2754	D11
2755	D11
2756	E11
2758	G9
2759	F8
2762	E13
2764	B3
2766	A4
2768	E5
2769	D5
2777	D2
2778	C5
2779	E3
2780	E5
2781	D5
2782	D12
2783	C7
2784	D13
2785	B13
2786	B4
2787	C5
2788	D2
2789	D2
2790	E2
2791	C7
2792	C8
2793	D13
2794	C9
2795	D12
2796	C10
2797	D8
2798	E8
2799	D13
3701	E6
3702	B6
3703	A6
3704	B6
3705	C3
3706	E6
3707	D6
3708	E6
3709	F5
3710	E4
3711	D5
3712	E3
3713	D7
3714	C6
3715	B6
3716	B6
3717	F4
3718	G4
3720	F7
3721	B2
3722	C2
3723	C2
3724	F2
3725	E3
3726	F2
3727	F5
3729	G9
3730	F7
3741	F12
3743	F4
3744	G12
3746	C6
3747	C6
3748	C5
3749	A7
3750	G3
3751	G8
3752	B8
3753	G8
3754	C8
3755	B10
3756	F4
3757	G3
3758	C10
3759	D8
3760	E8
3761	A12
3762	B12
3763	B12
3764	C12
3765	C12
3766	B14
3767	B12
3768	A13
3790	C4
3791	C3
3792	B3
3793	B4
3794	D11
3795	C5
3796	E11
3797	C5
3798	D6
5701	F4
5702	F3
5703	B5
5704	F7
5705	F6
5707	D2
5708	E2
5711	D5
5712	D5
5720	F9
5722	D13
5723	D13
5730	F2
5731	G2
5732	G8
6701	C6
6702	B12
6703	C12
6704	B6
6710	D8
6711	E8
7700	C5
7701	B7
7702	E11
7703	C7
7704	B5
7705	B6
7706	C6
7707	C5
7708	C13
7709	C13
7710	B13
7711	B13
7712	D9
7713	E9
7714	C5
7715-1	C9
7715-2	C11
9717	B5
9718	B13
F708	F2
F710	G2
F711	A2
F712	A2
F713	C3
F714	B5
F718	D10
F720	G8
F721	G2
F722	F2
F731	G8
F736	G7
F737	G6
F738	F2
F739	G2
F741	F8
F742	B9
F743	B9
F744	B9
F745	A9
F747	F5
F748	G5
F749	G6
F751	F6
I700	E6
I701	E6
I702	A6
I703	B6
I704	A6
I705	D6
I706	D5
I707	D5
I708	F12
I709	E4
I710	F5
I711	C4
I712	A5
I713	E4
I714	C8
I715	A7
I716	E3
I717	B5
I718	B5
I719	E3
I720	C8
I721	C3
I722	B3
I723	B9
I724	D3
I725	E2
I726	C3
I727	B5
I728	C9
I729	C5
I730	F7
I731	B11
I732	B6
I733	C10
I734	F12
I735	D8
I736	E8
I737	C6
I738	C6
I739	B6
I740	D9
I741	E9
I742	C12
I743	C12
I744	D5
I745	B4
I746	E13
I747	D11
I748	B3
I749	C3
I750	B12
I751	A12
I752	E13
I753	B3
I754	E3
I755	F4
I756	C2
I757	D2
I758	E11
I759	E11
I760	C5
I761	F8
I762	D11
I763	C6
I764	C13
I765	D13
I766	F9
I767	F2
I768	G3
I769	F3
I770	G2
I771	G3
I772	F8
I773	F9
I774	F9
I776	E4
I777	D2
I778	E3
I779	E3
I780	E13
I781	C13
I782	C13
I783	B3
I784	B3
I785	B4
I786	B4
I787	C4
I788	C7
I790	F3
I791	B12
I792	B13
I793	B13
I794	B12
I795	F6
I796	C12
I797	C12
I798	E5
I799	E4


SA3
AUDIO
SA3
AUDIO-L
AUDIO-R
0045 HEATSINK
7700 TDA7490
STBY-MUTE
FEED4
FEED3
FEED1
FEED2
CURREF
OSC
PWM
PRE-AMP1
PRE-AMP2
BC847B
BC847BW
BC857B
BAS316
PROT1
DCPROT
AUDIO-SW
TO 1M02
A4
LCD SUPPLY 42"
OR
TO 1M02
A2
LCD SUPPLY 30"/37"
B7B-EH-A
+16V+19V
-16V-19V
7715-1 LM833D
7715-2 LM833D
7712 BC847B
7713 BC857B
BZX384-C15
BZX384-C10
7702 TDA7482
+VCCS
-VCCS+VCC
-VCC
BOOT
OUT
PRE
PWM
FEEDCAP
STBY|MUTE
GNDS
FREQ
BOOTD
VREG
0044 HEATSINK
PROT_AUDIOSUPPLY
15W/8R
15W/8 L
B3B-PH-K
PLT09H
TO 1M52
B21
SSB EMG
OR
TO 1M52
B10
SSB JAGUAR
B9B-PH-K
POR-CLASSD
SOUND-ENABLE
PROT_AUDIOSUPPLY
AUDIO-SW
AUDIO-R
AUDIO-L
15W/8
CENTERWOOFER
B2B-PH-K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
8204 000 8313.5
E_14620_134.eps
031104

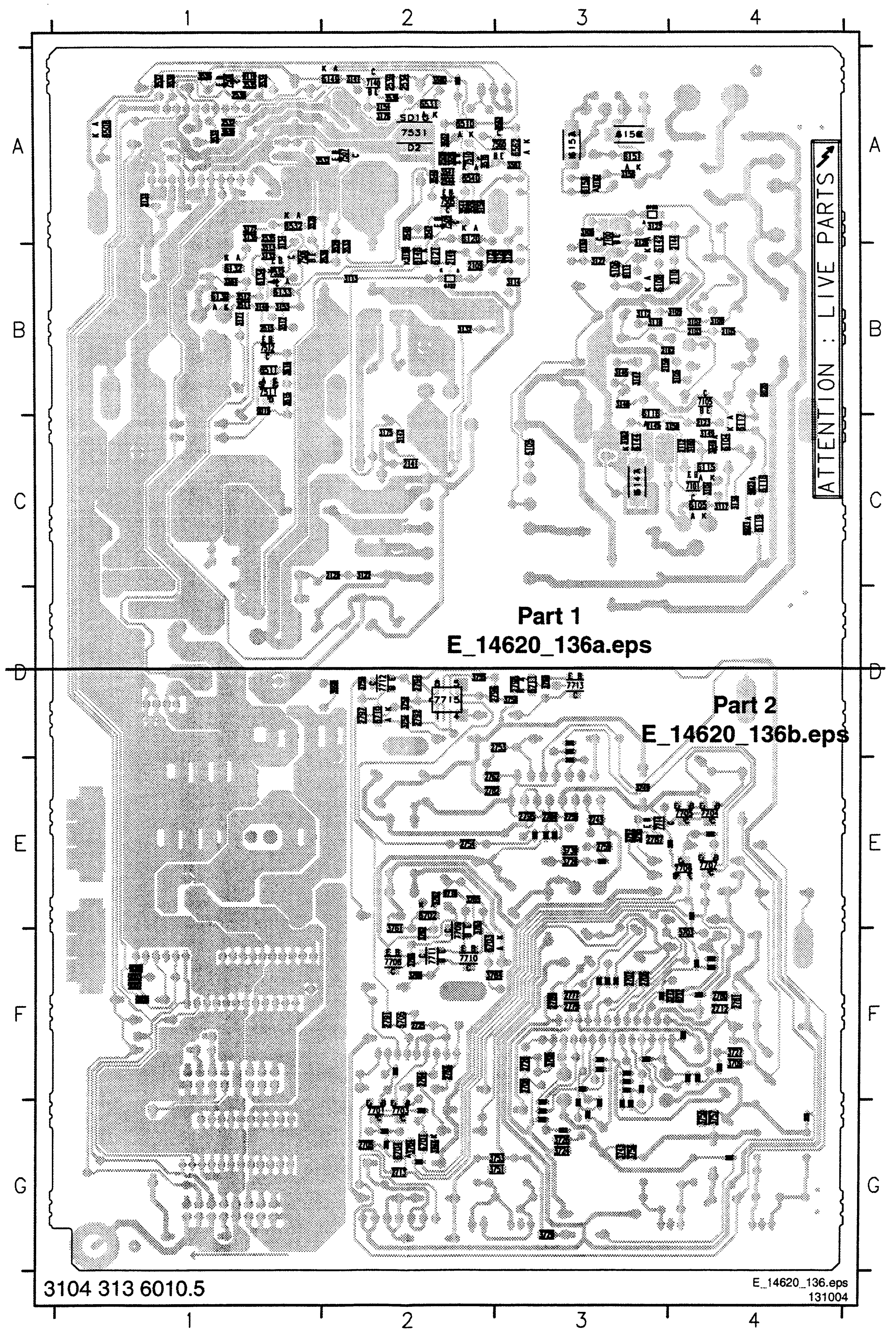
Layout LCD Standby Audio Panel (Top Side)



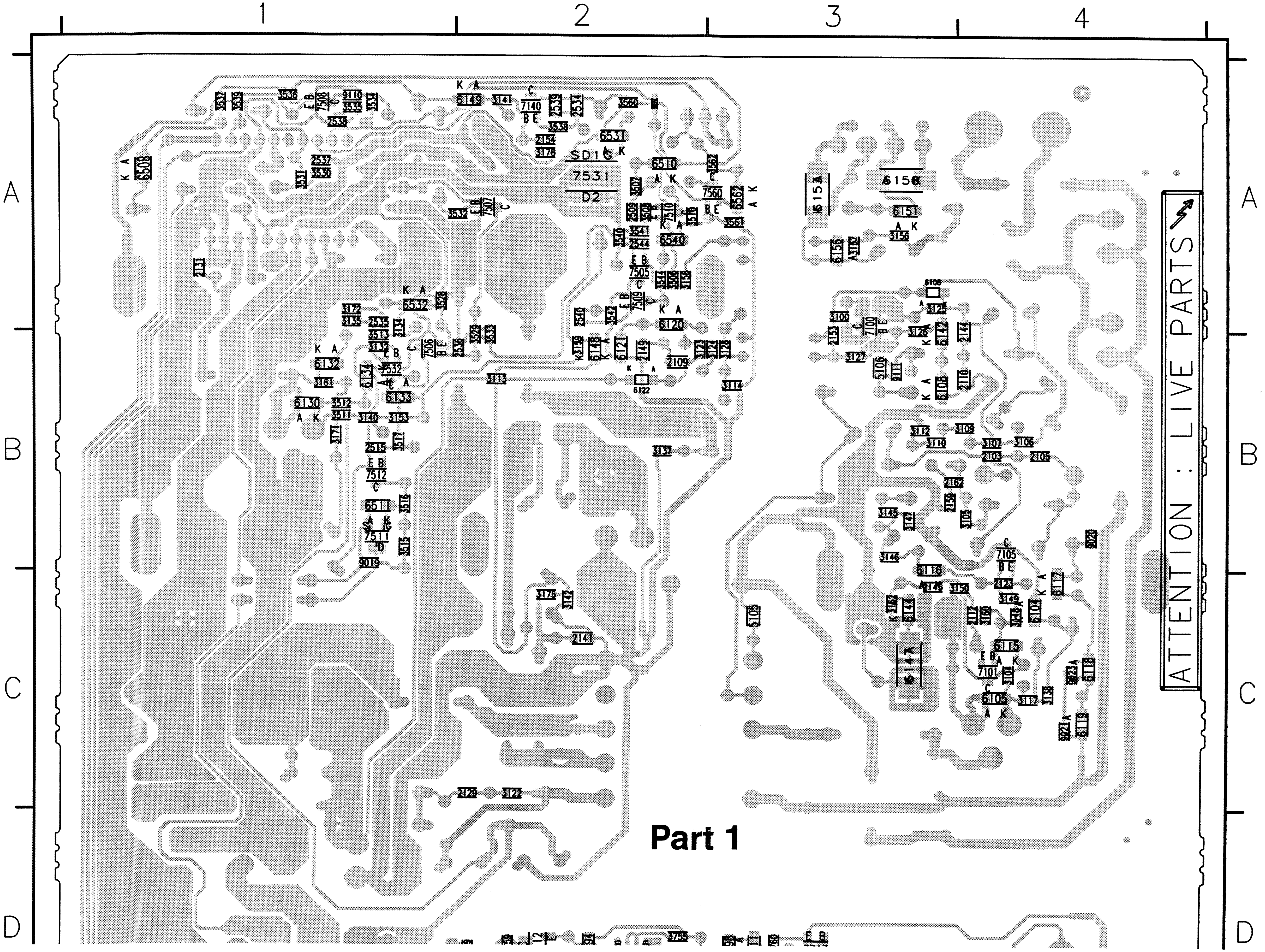
0001	G4	5507	D4
0044	D1	5508	C4
0045	E1	5701	F2
1301	B1	5702	F2
1303	E4	5704	E2
1304	D4	5707	G2
1305	A3	5708	G3
1306	A1	5711	F1
1307	A2	5712	E1
1309	D4	5720	E2
1310	A3	5722	E3
1311	B4	5723	E3
1312	F4	5730	G2
1313	G4	5731	G1
1314	G4	5732	G3
1315	F4	6103	B2
1316	G4	6107	C4
1317	F4	6113	B3
1318	F4	6114	B2
1320	E4	6125	A3
1735	G1	6140	C3
1736	G1	6504	D3
1737	G3	6505	C4
1738	G2	7102	C1
1739	F3	7131	B4
1M02	G3	7150	A2
1M03	A4	7501	B2
1M10	D4	7700	F2
1M46	A4	7702	E3
2101	B2	9001	A4
2102	B1	9004	E4
2107	A1	9005	E4
2108	A1	9006	E4
2111	A1	9007	E4
2118	B3	9010	E4
2124	B2	9011	E4
2132	A4	9018	D4
2140	C3	9022	A1
2143	B3	9050	G4
2150	A2	9051	G4
2152	D2	9052	F4
2160	B4	9053	B1
2163	B1	9054	B1
2506	B2	9055	C2
2507	D3	9056	A4
2508	D3	9057	A3
2510	D4	9058	A4
2511	D4	9059	B4
2512	C4	9060	A3
2513	C4	9061	A4
2533	A4	9062	A4
2717	F1	9063	A4
2729	G2	9064	A3
2758	E3	9065	A4
2768	F1	9066	A4
2769	F1	9067	C4
2778	E1	9068	C4
2783	G1	9069	A4
2785	E3	9070	A4
2788	F2	9071	F4
2790	E2	9072	F4
2793	E3	9073	F4
2799	E3	9112	C4
3101	B1	9113	A4
3102	B1	9721	G2
3103	B2	9722	G3
3108	C2	9723	G1
3111	B1	9724	F1
3155	A2	9725	E3
3190	E3	9726	D2
3191	E3	9727	D3
3192	E3	9728	E2
3509	D4	9729	D2
3711	F1	9730	E1
3713	F3	9731	F3
3747	E1	9732	G3
5018	E4	9733	G3
5019	E4	9734	F1
5102	B2	9735	F3
5103	C4	9736	F1
5104	C2	9738	F3
5108	C1	9739	F2
5110	C3	9740	E1
5112	C3	9741	E1
5115	B3	9742	E1
5500	C3	9743	G3
5501	A1	9744	F3
5504	A1	9745	G3
5505	B1		
5506	C4		

Layout LCD Standby Audio Panel (Bottom Side)

2103	B4
2105	B4
2109	B2
2110	B4
2112	C4
2123	C4
2129	C2
2131	A1
2141	C2
2144	A4
2145	C3
2149	B2
2153	B3
2154	A2
2159	B3
2162	B3
2509	A2
2515	B1
2534	A2
2535	A1
2536	B2
2537	A1
2538	A1
2539	A2
2540	A2
2544	A2
2702	F4
2704	F3
2705	G2
2706	F3
2707	F3
2708	F3
2709	G3
2710	F3
2711	G3
2712	F4
2713	G2
2714	F4
2715	F4
2716	F3
2718	F3
2719	F4
2720	F3
2721	G3
2722	G3
2723	E3
2725	F2
2726	G3
2727	G3
2728	F3
2741	D3
2743	E3
2753	D3
2754	E2
2755	E3
2756	E3
2759	E3
2762	E2
2764	F2
2766	F2
2777	F3
2779	F3
2780	F4
2781	F4
2782	E2
2784	E3
2786	F4
2787	E3
2789	F3
2791	F2
2792	D2
2794	D2
2795	E3
2796	D2
2797	D2
2798	D3
3100	A3
3104	C4
3105	B4
3106	B4
3107	B4
3109	B4
3110	B3
3112	B3
3113	B2
3114	B3
3117	C4
3122	C2
3123	B2
3124	B3
3125	A3
3126	A3
3127	B3
3128	B3
3132	B1
3134	A1
3135	A1
3137	B2
3138	C4
3140	B1
3141	A2
3142	C2
3145	B3
3146	B3
3147	B3
3148	C4
3149	C4
3150	C4
3152	C3
3153	B1
3155	A3
3156	A3
3157	A3
3158	A2
3159	B2
3160	C4
3161	B1
3171	B1
3172	A1
3175	C2
3176	A2
3190	E1
3191	E1
3192	E1
3506	A2
3507	A2
3508	A2
3509	D1
3510	A2
3511	B1
3512	B1
3513	B1
3515	B1
3516	B1
3517	B1
3528	A1
3529	B2
3530	A1
3531	A1
3532	A2
3533	B2
3534	A1
3535	A1
3536	A1
3537	A1
3538	A2
3539	A1
3540	A2
3541	A2
3542	A2
3544	A2
3560	A2
3561	A3
3562	A3
3701	F2
3702	G2
3703	G2
3704	G2
3705	F3
3706	G3
3707	F3
3708	F3
3709	F4
3710	F3
3711	E4
3712	F4
3713	F2
3714	E4
3715	E3
3716	G2
3717	G4
3718	G4
3720	E3
3721	F3
3722	G3
3723	G3
3724	G3
3725	F3
3726	G3
3727	F4
3729	G3
3730	E3
3741	D3
3743	G3
3744	E3
3746	G2
3747	E4
3748	F4
3749	E3
3750	G4
3751	G3
3752	D2
3753	G3
3754	D2
3755	D2
3756	G3
3757	G4
3758	D3
3759	D2
3760	D3
3761	F2
3762	F2
3763	E2
3764	F2
3765	E2
3766	F2
3767	E2
3768	F2
3790	F4
3791	F3
3792	F3
3793	F4
3794	E3
3795	E3
3796	E3
3797	E3
3798	G2
3999	D2
5105	C3
5106	B3
5703	F4
5705	F2
6104	C4
6105	C4
6106	A3
6108	B3
6115	C4
6116	B3
6117	B4
6118	C4
6119	C4
6120	A2
6121	B2
6122	B2
6130	B1
6132	B1
6133	B1
6134	B1
6142	B3
6144	C3
6147	C3
6148	B2
6149	A2
6150	A3
6151	A3
6153	A3
6156	A3
6508	A1
6510	A2
6511	B1
6531	A2
6532	A1
6540	A2
6562	A3
6701	G2
6702	E2
6703	F3
6704	G2
6710	D2
6711	D3
7100	A3
7101	C4
7105	B4
7140	A2
7505	A2
7506	B1
7507	A2
7508	A1
7509	A2
7510	A2
7511	B1
7512	B1
7531	A2
7532	B1
7560	A3
7701	G2
7703	G2
7704	E4
7705	E4
7706	E3
7707	E4
7708	F2
7709	F2
7710	F2
7711	F2
7712	D2
7713	D3
7714	E3
7715	D2
9002	F1
9003	F1
9008	F1
9009	F1
9019	B1
9020	B4
9021	C4
9023	C4
9074	A2
9110	A1
9111	B3
9717	E4
9718	E2
9737	F4



Layout LCD Standby Audio Panel (Bottom Side)


1
2
3
4
A
B
C
D
ATTENTION : LIVE PARTS
Part 1
SD1G
7531
D2
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7140
6531
6510
7560
6562
6540
6532
6120
6132
7532
6133
6130
6511
7511
6151
6156
6106
7100
6116
7105
6105
7101
6115
6114
6122
6121
6108
6104
6117
6118
6119
6508

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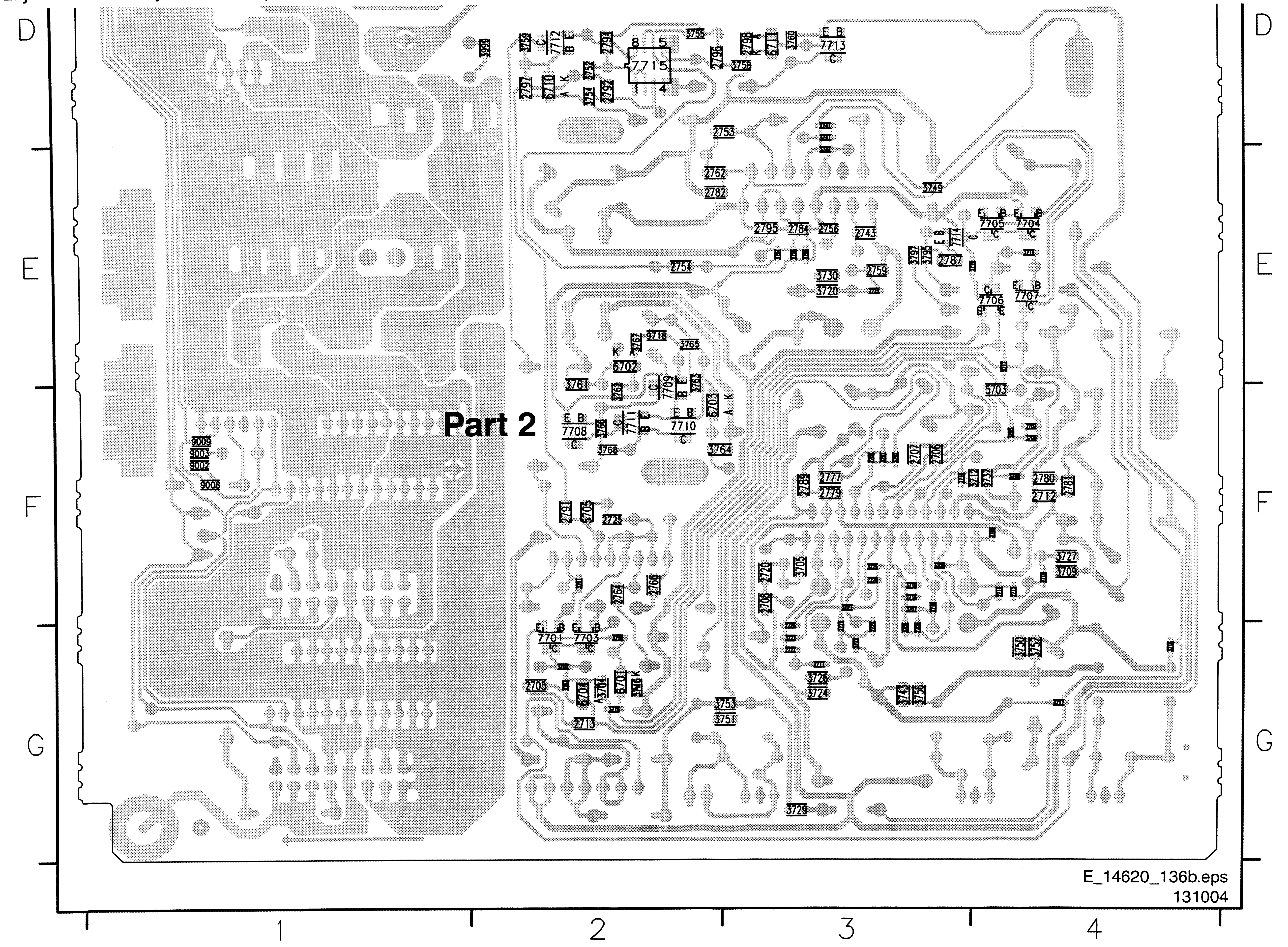
131004

Layout LCD Standby Audio Panel (Bottom Side)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E
F
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2
3
4
Part 2
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5
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4
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7705
7704
7714
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7709
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9008

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131004

Personal Notes:

8. Alignments

Index of this chapter:

8.1 General Alignment Conditions
8.2 Hardware Alignments
8.3 Software Alignments
8.4 Option Settings

8.1 General Alignment Conditions

8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage (depends on region): 230 V_{AC} / 50 Hz (± 10%).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 10 to 15 m.
- Measure voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
  Caution: never use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.1.2 Initial Settings

Perform all electrical adjustments with the following initial settings (via the "Active Control" button on the RC):

1. To avoid the working of the lightsensor, set "Active Control" to "Off".
2. Set "Smart Picture" to "Natural".

8.1.3 Alignment Sequence

- First, set the correct options:
  - In SAM, select (SERVICE) OPTIONS -> OPT. NO,
  - Fill in the option settings according to the set sticker (see also paragraph "Option Settings"),
  - Select STORE OPTIONS and push "OK" on the remote control,
  - After storing, the set must be restarted!
- Warming up (>10 minutes).
- White-D alignment.

8.2 Hardware Alignments

8.2.1 Backlight Voltage Alignment

Switch the set "on" and measure the voltage between pin 1 of connector 1304 and pin 1 of connector 1309 (ground). Align R3026 until this voltage is: 12 V_{DC} +/- 0.1 V

Caution: This voltage must be aligned very precisely: when it is too high, it can destroy the inverters. When it is too lown, the backlight will not start up.

8.3 Software Alignments

Put the set in SAM mode (see the "Service Modes, Error Codes and Fault Finding" section). The SAM menu will now appear on the screen. Select ALIGNMENTS and go to one of the sub menus. The alignments are explained below.

Notes:

- All changes must be stored manually.
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default values.

8.3.1 GENERAL

For the next alignments, supply the following test signals via a video generator to the RF input:

- EU/AP-PAL models: a PAL B/G TV-signal with a signal strength of at least 1 mV and a frequency of 475.25 MHz
- US/AP-NTSC models: an NTSC M/N TV-signal with a signal strength of at least 1 mV and a frequency of 61.25 MHz (channel 3).

VG2 TEST PATTERN
Not used.

HARD CLIPPER
Not used.

CLIP GAIN
Not used.

TUNER AGC
Purpose: To keep the tuner output signal constant as the input signal amplitude varies.

Default value: “28”.

In case the default value gives problems, use the next method:

1. Set the video generator to a colour bar test pattern and a RF amplitude of 1 mV.
2. Select the channel with the test picture.
3. Measure the DC voltage on pin 1 of the (main) Tuner.
4. Adjust this voltage via TUNER AGC to just below 3.5 V.

IF PLL OFFSET
Purpose: To minimise crosstalk of video into sound.

Default value: “31”.

In case the default value gives problems, use the next method:

1. Set the video generator to a crosshatch test pattern (no sound) and a RF amplitude of 10 mV.
2. Select the channel with the test picture.
3. Listen to the audio on the loudspeakers.
4. Align the value to get minimum noise in the sound.

8.3.2 WHITEPOINT

- Set ACTIVE CONTROL to "Off".
- In the [MENU] -> PICTURE user menu set:
  - DYNAMIC CONTRAST to "Off".
  - COLOUR ENHANCEMENT to "Off".
  - COLOUR to "0".
  - CONTRAST to "100".
  - BRIGHTNESS to "37".
- Go to the SAM and select ALIGNMENTS -> WHITE POINT.

Method 1 (with colour analyser):

- Use a 100% white screen as input signal and set the following values:
  - COLOR TEMPERATURE: "Tint to be aligned".
  - All WHITE POINT values to: "127".
- Measure with a calibrated (phosphor- independent) colour analyser in the centre of the screen. Use a contactless analyser (e.g. Minolta CA-210) to align an LCD TV. The colour analyser may not touch the screen surface. Consequently, the measurement needs to be done in a dark environment.
  Note: The colour analyser needs to be calibrated for LCD!

- Adjust, by means of decreasing the value of one or two whitepoints, the correct x,y coordinates (see table "White D alignment values"). Tolerance: dx,dy: ± 0.004.
- Repeat this step for the other Colour Temperatures that need to be aligned.
- When finished press "Store" to store the aligned values to the NVM.

Table 8-1 White D alignment values

Colour Temp.	Cool	Normal	Warm
x	0.267	0.278	0.314
y	0.271	0.282	0.320

When such equipment is not available, use “method 2”.

Method 2 (without colour analyser):
If you do not have a colour analyser, you can use the default values. This is the next best solution. The default values are average values coming from production (statistics).

1. Select a COLOUR TEMPERATURE (e.g. COOL, NORMAL, or WARM).
2. Set the RED, GREEN and BLUE default values according to the values in the "Tint settings" table.
3. When finished press "Store" to store the aligned values to the NVM.

Table 8-2 Tint settings Sharp LCD

	Cool	Normal	Warm
R	119	127	127
G	127	123	108
B	126	113	65

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of I²C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence / absence of these specific ICs (or functions) is made known by the option codes.

Notes:

- After changing the option(s), save them with the STORE command.
- The new option setting is only active after the TV is switched "off" and "on" again with the Mains switch (the EAROM is then read again).

8.4.2 DEALER OPTIONS

Table 8-3 Dealer options

Menu item	Subjects	Options	Description
Personal Options	Blue Mute	Yes	Picture (blue) mute active in case no picture detected
		No	Noise in case of no picture detected
	Virgin Mode	Yes	TV starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
		No	TV does not starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
	Auto Store Mode (only for EU and AP-PAL sets)	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	TXT Preference (only for EU and AP-PAL sets)	TOP	Preference to TOP Teletext
		FLOF	Preference to FLOF Teletext

8.4.3 (SERVICE) OPTIONS

Select the sub menu's to set the initialisation codes (options) of the set via text menus.

Table 8-4 Service options

Menu-item	Subjects	Options	Description
Teletext	Flash RAM	Yes / No	Flash RAM present / not present
	NexTView type	None	Feature not present
		Textguide only	Feature present, but only as text guide
		NexTView 2c3	Feature present, for countries that support NexTView
Display	Display type	LCD / PDP / LCOS / PTV	Used display technology
	Display Size	30” / 32” / 32” / 42”	Screen size
	Display Resolution	Hor. x Vert. pixels	Resolution of the used display
Video Repro	Lightsensor	Yes / No	Feature present / not present
	Combfilter	3D Combfilter	Only selectable when Columbus is present
	Picture Processing	None	
	Signalling Bits		

Menu-item	Subjects	Options	Description
Source	HDMI 1	Yes / No	Connector present / not present
	HDMI 2	Yes / No	Connector present / not present
	EXT3	Yes / No	Connector present / not present
	USB	1 USB / 2 USB	1 USB connector present / 2 USB connectors present
Audio Repro	Dolby		
	Rear Speakers	Cordless Off	
	Subw. Internal Present	Yes / No	Feature present / not present
	Subw. External Present	Yes / No	Feature present / not present
	Acoustic System	None	Cabinet design
		Entry	Cabinet design
		FTV_3.1 STEP	Cabinet design (WRAP design)
		FTV_4.1 TOP	Cabinet design (with NXT speakers)
	Nr. SPDIF inputs	SPDIF input 1	
Opt. no.	Group 1		00144 04610 01043 08200 (see set sticker)
	Group 2		00528 00000 12327 00000 (see set sticker)

8.4.4 OPT. NO. (Option numbers)

Select this sub menu to set all options at once (expressed in two long strings of numbers).
An option number (or "option byte") represents a number of different options. When you change these numbers directly, you can set all options very quickly. All options are controlled via eight option numbers.
When the EAROM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a sticker inside the TV set.

Example: The options sticker gives the following option numbers:
- 00144 04610 01043 08200
- 00528 00000 12327 00000

The first line (group 1) indicates options 1 to 4, the second line (group 2) options 5 to 8.
Every 5-digit number represents 16 bits (so the maximum value will be 65536 if all options are set).
When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number.

Note: *As the info was not up-to-date at the time of writing, the option number explanation is not given in this manual. As soon it becomes available, a Service Info or update manual will be send via the appropriate channels.*

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction
9.2 Power Supply
9.3 Inputs
9.4 MPIF (PNX 3000)
9.5 AVIP (PNX 2000)
9.6 COLUMBUS (Comb Filter)
9.7 VIPER II (PNX 8550)
9.8 LVDS Transmitter
9.9 Stand-by Controller
9.10 Abbreviation list
9.11 IC Data Sheets

Notes:

- Only **new** circuits (circuits that are not published recently) are described.
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the wiring, block (chapter 6) and circuit diagrams (chapter 7). Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

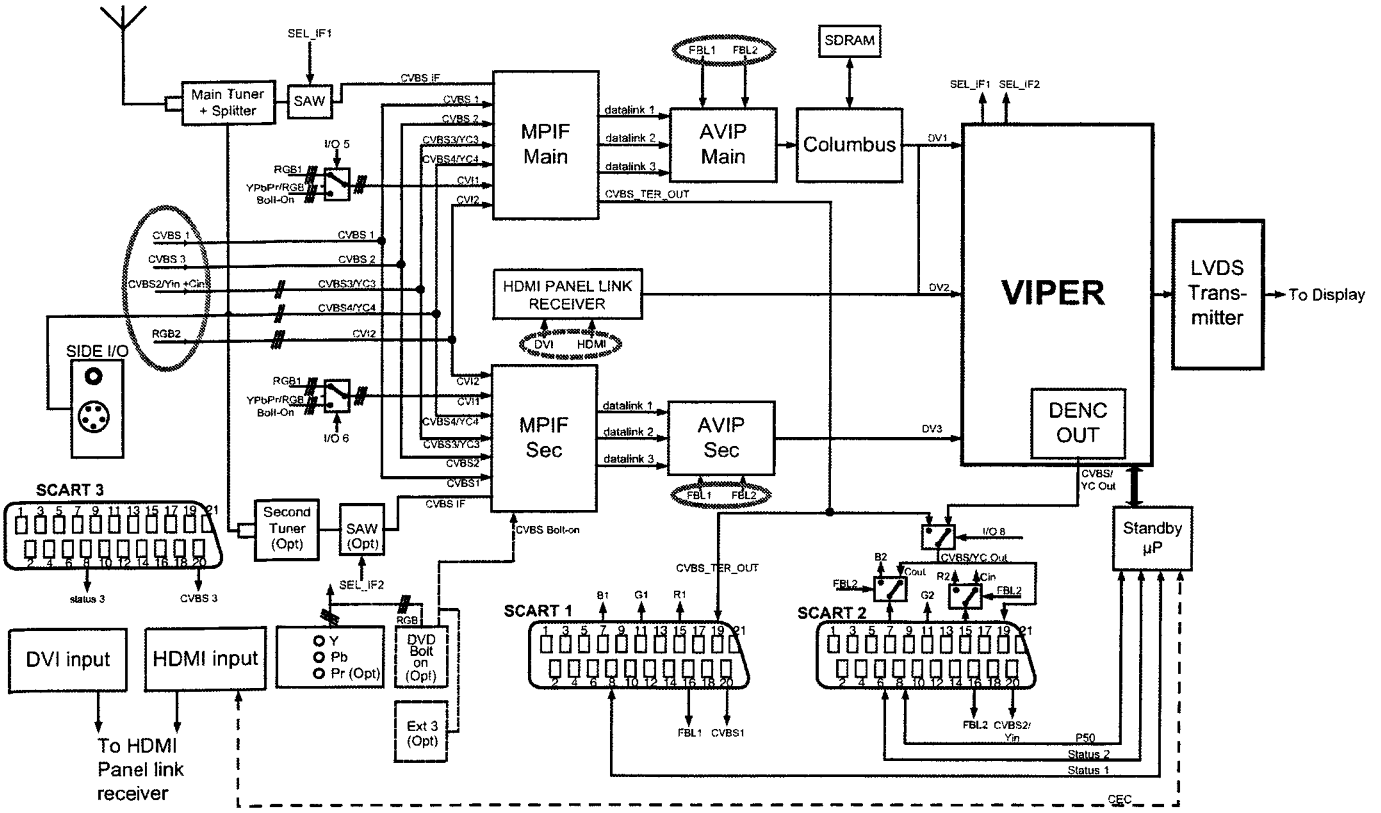
The FTL3.1 is a new global TV chassis, specifically developed for Matrix Displays.
The key components are: MPIF, AVIP, and VIPER 2.
Additionally a COLUMBUS 3D Comb filter can be used.
The chassis will be used in High-end LCD and Plasma TV sets.

9.1.1 Features

The main drivers for this chassis are:

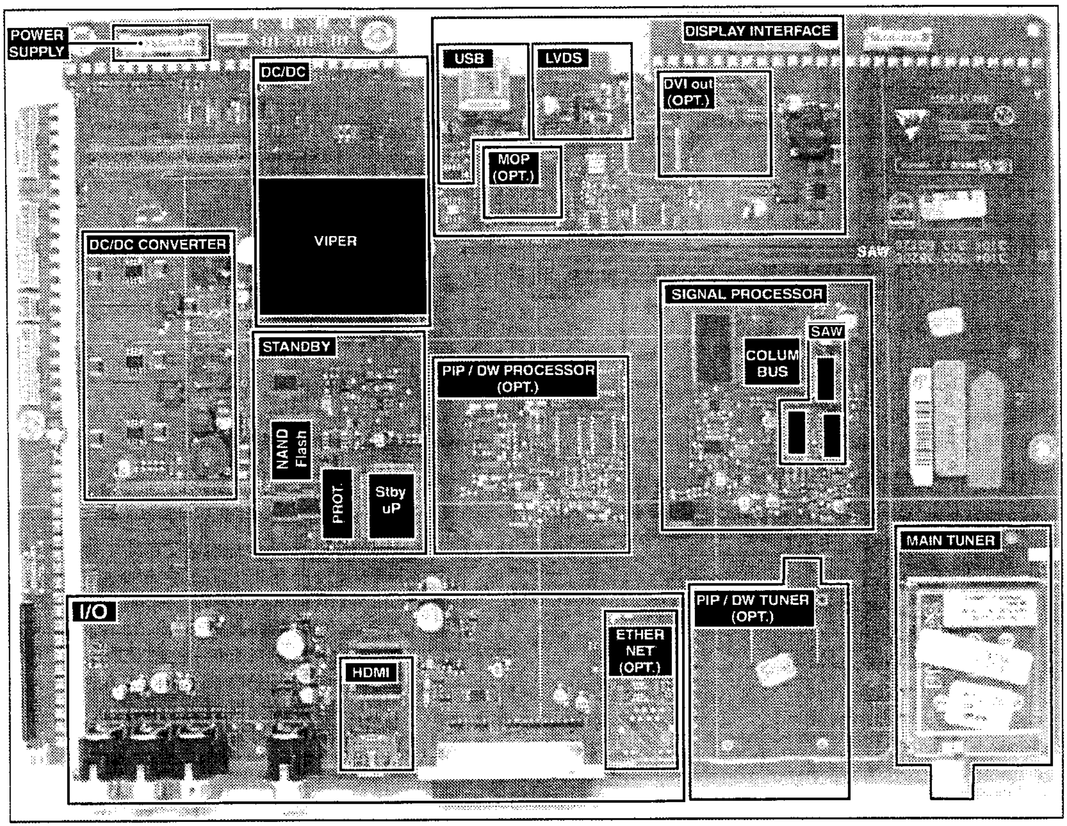
- Global architecture fit for all regions and all display types, with main focus on matrix displays, but also fit for LCOS and PTV applications.
- Large scale function integration in the key components itself.
- Fit for both analogue and digital signal processing, this by converting analogue signals into digital transport streams and allowing seamless zapping between all possible signal sources. This makes the chassis applicable for e.g. receiving ATSC and DTV in an integrated product form.
- The internal digital processing allows new "Multi-Media" applications such as Content Browser, Memory Card Slot, Local Area Network support and all kinds of streaming applications.
- The chassis can be upgraded in the future with internal functionality such as Personal Video Recording, DVD-RW.
- From signal processing via "hardware circuits" to signal processing via "software algorithms".

9.1.2 Chassis Block Diagram


SEL_IF1
Main Tuner + Splitter
SAW
CVBS IF
CVBS 1
CVBS 2
CVBS3/YC3
CVBS4/YC4
CVI1
CVI2
I/O 5
RGB1
YPbPr/RGB
Bolt-On
MPIF Main
datalink 1
datalink 2
datalink 3
CVBS_TER_OUT
FBL1 FBL2
AVIP Main
SDRAM
Columbus
DV1
SEL_IF1 SEL_IF2
VIPER
LVDS Trans-mitter
To Display
CVBS 1
CVBS 3
CVBS2/Yin +Cin
RGB2
SIDE I/O
HDMI PANEL LINK RECEIVER
DVI HDMI
DV2
MPIF Sec
AVIP Sec
DV3
DENC OUT
I/O 6
SCART 3
status 3
CVBS 3
Second Tuner (Opt)
SAW (Opt)
SEL_IF2
CVBS IF
CVBS Bolt-on
CVBS/ YC Out
Standby µP
I/O 8
CVBS/YC Out
CVBS_TER_OUT
B1 G1 R1
SCART 1
FBL1 CVBS1
B2
FBL2
Cout
R2
Cin
G2
SCART 2
FBL2 CVBS2/ Yin
P50
Status 2
Status 1
CEC
DVI input
HDMI input
Y Pb Pr (Opt)
RGB
DVD Bolt on (Opt)
Ext 3 (Opt)
To HDMI Panel link receiver

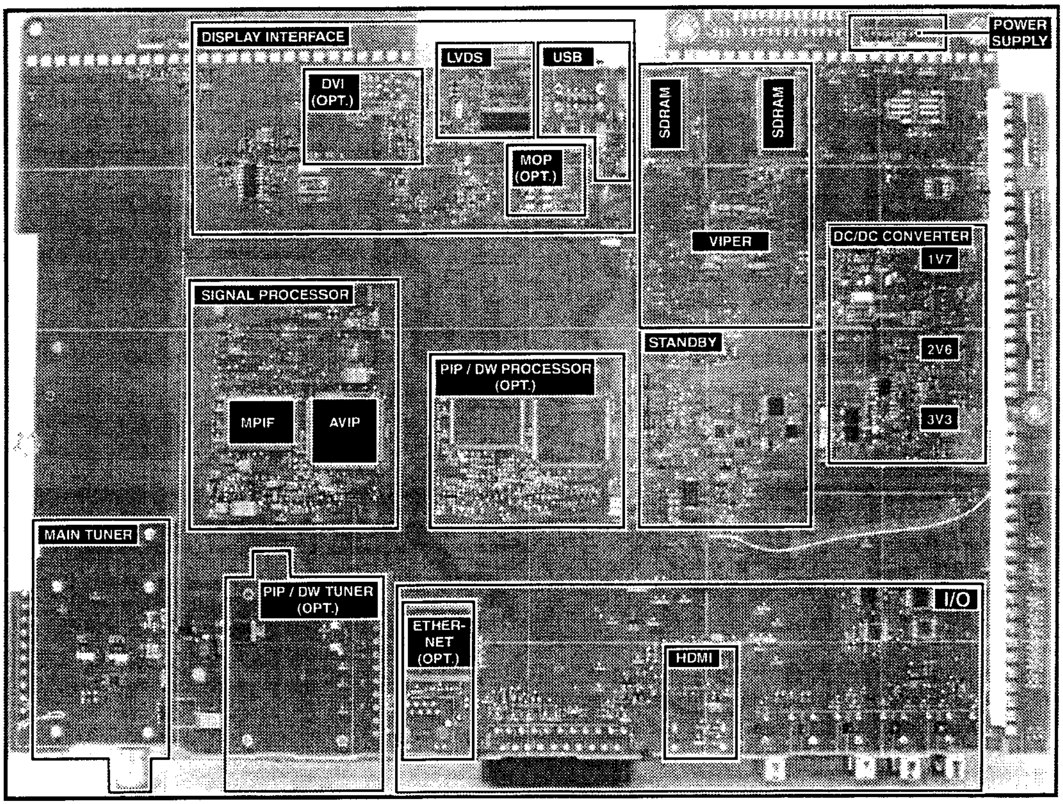
E_14700_080.eps
021104

Figure 9-1 Chassis Block Diagram


POWER SUPPLY
DC/DC
USB
LVDS
DISPLAY INTERFACE
DVI out (OPT.)
MOP (OPT.)
DC/DC CONVERTER
VIPER
SAW
SIGNAL PROCESSOR
SAW
COLUM BUS
STANDBY
PIP / DW PROCESSOR (OPT.)
NAND Flash
PROT.
Stby uP
MAIN TUNER
I/O
PIP / DW TUNER (OPT.)
ETHER NET (OPT.)
HDMI

E_14700_079.eps
121104

Figure 9-2 SSB top view


DISPLAY INTERFACE
LVDS
USB
POWER SUPPLY
DVI (OPT.)
SDRAM
SDRAM
MOP (OPT.)
VIPER
DC/DC CONVERTER
1V7
SIGNAL PROCESSOR
STANDBY
PIP / DW PROCESSOR (OPT.)
2V6
MPIF
AVIP
3V3
MAIN TUNER
PIP / DW TUNER (OPT.)
I/O
ETHER-NET (OPT.)
HDMI

E_14700_078.eps
091104

Figure 9-3 SSB bottom view

.2 Power Supply

.2.1 Introduction

The MF (Mains Filter) Supply is the main power supply for this chassis. It is the same supply as used in the FTL2.x chassis, therefore it is not described in this chapter. Please refer to the FTL2.1 manual (order code 3122 785 14620).
As the VIPER and many other ICs on the SSB require low supply voltages at high current (a few Amperes), onboard DC/DC converters are implemented. There are three DC/DC converters on the board, which all use the 12VS line as input:

- 1.2V converter.
- 2.8V/2.5V converter.
- 3.3V converter.

9.2.2 Block Diagram

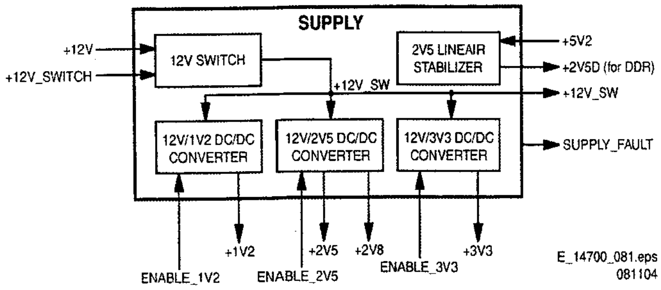


Figure 9-4 DC/DC converter block diagram

Besides these three DC/DC converters the DC/DC layout cell also has a:

- 12VS switch (to provide +12VSW out of the 12VS, when the 12V_SWITCH line goes low (Stand-by Microprocessor controlled).
- +2.5VD linear stabiliser (from +5V2).

Start-up sequence

1. Apply +5V and +12VS together with other supply voltages needed by the Stand-by Microprocessor to begin the start-up sequence; the voltage +2V5D should be +2.5 V ± 5%.
2. The +12VSW should be enabled by the 12V_SWITCH signal (active "low") from the Stand-by Microprocessor.
3. The DC/DC converters are activated by their enable signals driven by the Stand-by Microprocessor in this order:
   1. +1V2 (+1.26 V ± 4%, enabled by ENABLE_1V2).
   2. +2V5 and +2V8 (+2.65 V ± 4% and +2.95 V ± 10%, enabled by ENABLE_2V5).
   3. +3V3 (+3.4 V ± 4% enabled by ENABLE_3V3).

Control LEDs on the SSB light up when the +1V2, +2V8 (+2V5), +2V5D, and +3V3 are available.
The signal SUPPLY_FAULT must be "high" (> 2 V) when all DC/DC converters are working properly. The signal is becoming active ("low") when there is a defective or missing component in any of the three DC/DC converters or if the output voltages are short-circuited to ground. In this last case, the Stand-by Microprocessor stops the converters.

Driver

The L69100 is a PWM controller for high performance DC/DC conversion. The oscillator switching frequency pin is connected to ground via an external resistor (100 kohm) so the external frequency is increased to about 250 kHz.
The Soft Start time is programmed by an external capacitor between pin SS and GND and is loaded via the internal 10 A current generator. This pin (SS) is also used to disable the driver IC by forcing a voltage lower than 0.4 V.
For all the drivers, the VREF and EAREF pins are connected together, so the internal 900 mV reference is used and the output voltage is measured and adjusted by an external voltage divider, connected to VFB.
The over-current threshold is set with a resistor connected to pin OCSET and the upper MOSFET Drain.
High peak-current gate drivers provide for fast switching to the external power section, and the output current can be in excess of 20 A.
The device assures protections against load over-current and over-voltage. An internal crowbar is also provided, turning "on" the low side MOSFET as long as the over-voltage is detected. In case of over-current detection, the soft start capacitor SS is discharged and the system works in Hiccup mode.
Pin PGOOD is an open collector output and it is pulled "low" if the output voltage is not within the specified thresholds.

9.3 Inputs

9.3.1 USB/Memory Card

The USB1.1 is a hardware block in the VIPER. There are two USB 1.1 ports. Each port has a D+ and D- line; this is the differential signal path for USB. There is also one OVER_CURRENT_DETECT and POWER_ENABLE line that is used for both ports (these lines are controlled by VIPER).
A tandem USB connector is mounted on the SSB, on which you can connect two USB devices; one device will be the SCM digital media card-reader. Only USB mass storage class device is supported, so other USB devices (card-readers) have to be compliant with this class.

Each USB port has four lines:

- 5V (red).
- D- (white).
- D+ (green).
- GND (black).

The host (= SSB) needs to provide the power supply to the attached devices (like memory cards or other USB devices). Since it is not known what the customer will attach (e.g. a USB hub with multiple USB devices), and these USB devices draw current from the SSB, these supply lines must be protected against over-current and/or too many connected devices.
This is controlled by the VIPER via the USB_OVERCUR line (see diagram 6A): when more then 500mA/channel is drawn from the USB ports, the protection becomes active (= "high").

During stand-by, when there is no +5V available (and VIPER is not active), the USB port does not work. This is controlled by the VIPER via the USB_BUS_PW line (see diagram 6A), which switches the 5V input to the outputs of IC7001.

9.3.2 HDMI

Introduction

Note: Text below is a summary from the "HDMI Specification" that is issued by the HDMI founders (see *http://www.hdmi.org*).

This High-Definition Multimedia Interface is developed for transmitting digital television audiovisual signals from DVD players, set-top boxes and other audiovisual sources to television sets, projectors and other video displays.
HDMI can carry high quality multi-channel audio data and can carry all standard and high-definition consumer electronics video formats. Content protection technology is available.
HDMI can also carry control and status information in both directions.

As shown in the HDMI block diagram, the HDMI connector carries four differential pairs that make up the TMDS (Transition Minimised Differential Signalling) data and clock channels. These channels are used to carry video, audio, and auxiliary data. In addition, HDMI carries a VESA DDC channel.

The DDC is used for configuration and status exchange between a single source device and a single sink device.

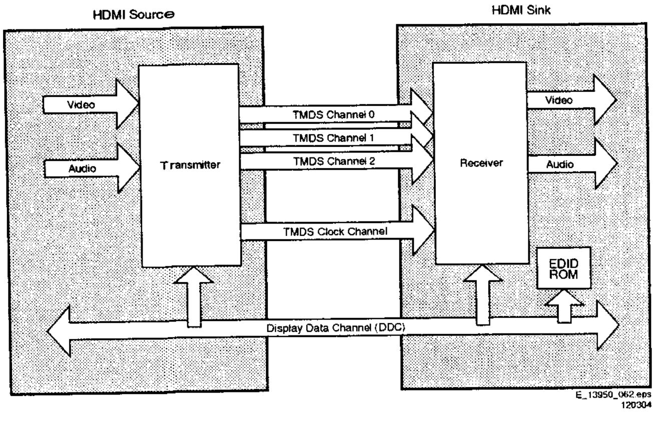


Figure 9-5 HDMI block diagram

Audio, video, and auxiliary data is transmitted across the three TMDS data channels. The video pixel clock is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels.
Video data is carried as a series of 24-bit pixels on the three TMDS data channels. TMDS encoding, converts the 8 bits per channel into the 10 bit DC-balanced transition minimized sequence, which is then transmitted serially across the pair at a rate of 10 bits per pixel clock period.
Video pixel rates can range from 25 MHz to 165 MHz. Video formats with rates below 25 MHz (e.g. 13.5 MHz for 480i/ NTSC) can be transmitted using a pixel-repetition scheme. The video pixels can be encoded in either RGB, YCBCR 4:4:4, or YCBCR 4:2:2 formats. In all three cases, up to 24 bits per pixel can be transferred.
In order to transmit audio and auxiliary data across the TMDS channels, HDMI uses a packet structure. In order to attain the higher reliability required of audio and control data, this data is protected with a BCH error correction code and is encoded using a special error reduction coding to produce the 10-bit word that is transmitted.
Basic audio functionality consists of a single IEC 60958 audio stream at sample rates of 32 kHz, 44.1 kHz, or 48 kHz. This can accommodate any normal stereo stream. Optionally, HDMI can carry a single such stream at sample rates up to 192 kHz or from two to four such streams (3 to 8 audio channels) at sample rates up to 96 kHz. HDMI can also carry IEC 61937 compressed (e.g. surround-sound) stream at sample rates up to 192 kHz.
The DDC is used by the source to read the sink's Enhanced Extended Display Identification Data (E-EDID) in order to discover the sink's configuration and/or capabilities.

HDMI is backward compatible with DVI (1.0). Compared with DVI, HDMI offers:
- YUV 4:4:4 (3 x 8-bit) or 4:2:2 (up to 2 x 12-bit).
- Digital audio in CD quality (16-bit, 32/44.1/48 kHz), higher quality available (8 channels, 192 kHz).
- Remote control via CEC bus (Consumer Electronics Control): allows user to control all HDMI devices with the TV's remote control and menus.
- Smaller connector (SCART successor).
- Less cables: e.g. from 10 audio/9 video cables to 3 HDMI cables.

Implementation
The main task for the Panel Link Cinema SiI9993 is scaling of the inputs to an appropriate format for the VIPER II input (two main transport streams and one sub transport stream).

The Panel Link Cinema SiI9993 incorporates an extremely flexible audio and video interface. An integrated colour space converter provides full backward compatibility with DVI devices. With both digital and analogue video (RGB/YPbPr) output, the SiI9993 easily fits into existing DTV architectures. An S/PDIF port outputs either 2-channel PCM audio or encoded data such as Dolby Digital and DTS. An I2S port outputs PCM data to low-cost audio DACs.

Each SiI9993 comes pre-programmed with unique HDCP (High-bandwidth Digital Content Protection) keys, providing the highest level of security. The HDCP protocol requires values to be exchanged between the video transmitter and video receiver. These values are exchanged over the DDC channel of the HDMI/DVI interface. The E-DDC channel follows the I^2C serial protocol. The SiI9993 is the video receiver and will have a connection to the E-DDC bus with a slave address. It decrypts both video and audio.

Some features:
- HDMI 1.0 and DVI 1.0 compliant receiver
- Integrated Panel Link core supports DTV resolutions (480i/ 576i/480p/576p/720p/1080i)
- Digital video interface supports video processors:
  - 24-bit RGB 4:4:4.
  - 24-bit YCbCr 4:4:4.
  - 16/20/24-bit YCbCr 4:2:2.
  - 8/10/12-bit YCbCr 4:2:2 (ITU.656).
- Analogue RGB and YPbPr output:
  - 10-Bit DAC.
  - Separate or Composite Syncs (Sync on Y)
- S/PDIF output supports PCM, Dolby Digital, DTS digital audio transmission (32 - 48 kHz f_s) using IEC 60958 and IEC 61937.
- Programmable I2S interface for connection to low-cost audio DACs.
- Integrated HDCP decryption engine for receiving protected audio and video content.
- Pre-programmed HDCP keys provide highest level of key security, simplifies manufacturing.
- Programmable registers via slave I^2C interface.
- 3.3V operation in 100-pin TQFP package.
- Power management.

9.4 MPIF (PNX 3000)

9.4.1 Introduction

The MPIF (Multi Platform InterFace, type number PNX3000, item number 7100) is an analogue video and audio pre-processing unit for the AVIP TV processor. It contains the high frequent IF part and all the analogue video and audio source switching for external in- and outputs. The MPIF can handle CVBS, Y/C, RGB (1fH/2fH) and YPbPr (1fH/2fH) video signals as well as stereo, I2S, and second sound IF audio signals. The MPIF converts the selected video and audio streams from the analogue to the digital domain. Via three high-speed serial data links (I2D), the digitised audio and video signals are streamed (594 Mbit/s) to the AVIP IC for further processing.
The MPIF uses a clock coming from the AVIP of 13.5 MHz and is I^2C driven. The supply voltage for the MPIF is 5V.

The MPIF uses the following input signals:
- CVBS, Y/C, YPbPr, or RGB video format.
- 1fH or 2fH video.
- Clock 13.5 MHz from the AVIP.
- I^2C from the VIPER.
- Clamping-pulse from the AVIP.

9.4.2 Block diagram

Following figure shows the MPIF block diagram:

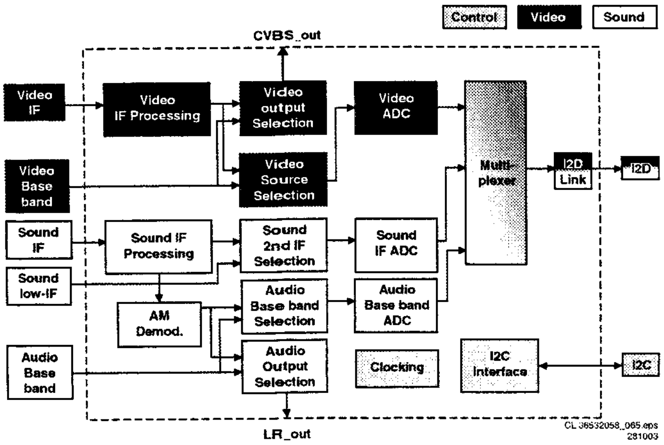

Control
Video
Sound
CVBS_out
Video IF
Video IF Processing
Video output Selection
Video ADC
Multi-plexer
I2D Link
I2D
Video Base band
Video Source Selection
Sound IF
Sound IF Processing
Sound 2nd IF Selection
Sound IF ADC
Sound low-IF
AM Demod.
Audio Base band Selection
Audio Base band ADC
Audio Base band
Audio Output Selection
Clocking
I2C Interface
I2C
LR_out
CL 36532058_065.eps 281003

Figure 9-6 MPIF block diagram

9.4.3 IF Processing

The MPIF is capable of demodulation of RF signals.

Analogue Vision IF Processing
Some specifications:

- Synchronous demodulation of the IF vision carrier. Selectable frequency and auto-calibration of the VCO (Voltage controlled oscillator).
- Group delay correction for BG system.
- AGC at vision IF level to give fixed CVBS output level, and AGC at RF level (tuner AGC) to limit output level of the tuner.
- AGC gating for bad reception conditions.
- CVBS amplitude correction and mute.
- Detections for AFC and video presence.

The video signal is demodulated by means of an alignment-free PLL carrier regenerator with an internal VCO. This VCO is calibrated by means of a digital control circuit, which uses an external crystal frequency as reference. The frequency setting for the various standards (33.4, 33.9, 38.0, 38.9, 45.75 and 58.75 MHz) is realised via the I^2C bus.
The AFC output is generated by the digital control circuit of the IF-PLL demodulator and can be read via the I^2C bus.
The AGC-detector operates on "top sync" or "top white" level.
The MPIF IC has an integrated sound trap filter. The trap frequencies can be switched via the I^2C-bus.
Also, a group delay correction filter is integrated. The filter can be switched between the PAL BG curve and a flat group delay response characteristic. This has the advantage that in multi-standard receivers the video SAW filter does not need to be switchable (cost effective).

Analogue Sound IF Processing
Some specifications:

- A switch to select QSS or inter-carrier mode.
- Sound carrier frequency conversion at second IF sound frequency (SSIF)
- A switch to select internal or external SSIF.
- AGC at sound IF level (for QSS (quasi-split-sound) mode) and AGC at SSIF level (for inter-carrier and QSS modes).
- Demodulation of AM modulated carrier (L and L' standards).

The MPIF has a separate sound IF input to enable Quasi Split Sound (QSS) applications. The sound IF amplifier is similar to the vision IF amplifier and has a gain control range of about 55 dB.
The AGC detector measures the SIF carrier levels (average level of AM or FM carriers) and ensures a constant signal amplitude for the AM demodulator and QSS mixer.

For applications without SIF SAW filter, the IC can also be used in intercarrier mode. In this mode, the composite video signal from the VIF amplifier is fed to the QSS mixer and converted to the intercarrier frequency. AM sound demodulation is realised in the analogue domain with the QSS mixer.

9.4.4 Source Selection

Below the main functions and features of the main blocks in the MPIF for video and audio are explained.

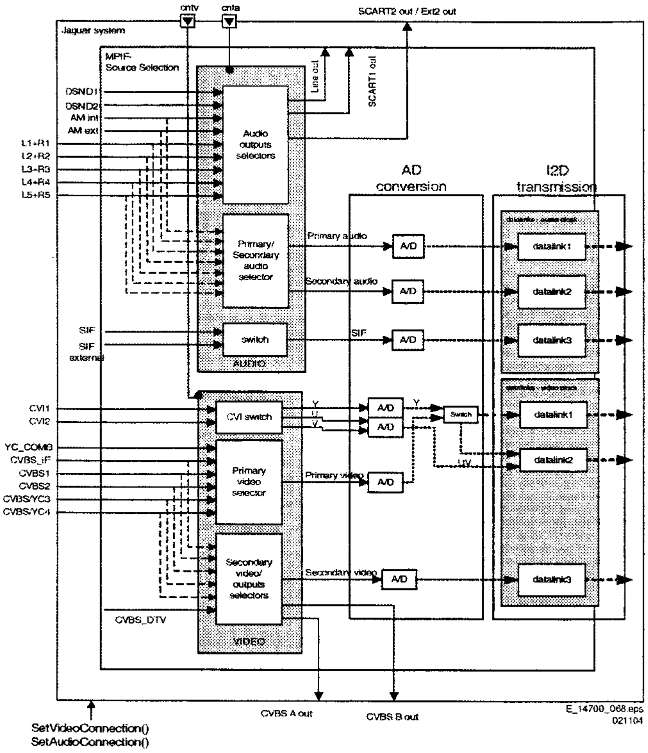

cntv
cnta
SCART2 out / Ext2 out
Jaguar system
MPIF Source Selection
DSND1
DSND2
AM int
AM ext
L1+R1
L2+R2
L3+R3
L4+R4
L5+R5
Line out
SCART1 out
Audio outputs selectors
AD conversion
I2D transmission
Primary/ Secondary audio selector
Primary audio
Secondary audio
A/D
datalink1
datalink2
datalink3
SIF
SIF external
switch
AUDIO
CVI1
CVI2
YC_COMB
CVBS_IF
CVBS1
CVBS2
CVBS/YC3
CVBS/YC4
CVI switch
Y
U
V
Switch
UV
Primary video selector
Primary video
Secondary video/ outputs selectors
Secondary video
CVBS_DTV
VIDEO
SetVideoConnection()
SetAudioConnection()
CVBS A out
CVBS B out
E_14700_068.eps 021104

Figure 9-7 MPIF analogue source selection block

Video selectors
The CVI switch (Composite Video Input, including RGB, YUV, and YPbPr) is selecting the signal from one of the two CVI inputs; the output is always a YUV signal.
The primary video selector is selecting a signal from the CVBS and YC inputs; the video coding of the output signal equals to the video coding of the input signal.
The primary video selector has an extra input (YC_COMB), capable of selecting an Y/C signal from the comb filter. This input cannot be downscaled to a CVBS signal and fed back to the CVBS_A or CVBS_B output. It is also advisable not to connect other sources to the YC_COMB input because it is treated as an internal one that is not available for the outside world.
Two video output selectors are responsible for the contents of CVBS_A and CVBS_B video out.

Audio selectors
The primary audio selector is selecting a signal from five external stereo inputs and one stereo input that handles two mono signals (AM internal and AM external). The AM internal signal is demodulated in the IF part and is internally routed, so not available as external input. Additionally, the AM internal signal is available on the left channel whereas the AM external signal is available on the right channel.
The secondary audio selector is selecting a signal from the same range as the primary audio selector; the second audio selector can work in stereo or mono mode. In case the stereo mode is selected, it is alike the primary audio selector. In mono mode, the input stereo signal L+R is transformed into a mono signal (L+R)/2 and put on the left channel of the stereo output.

When the stereo input (handling two mono signals) is selected and the selector works in mono mode, the AMint and AMext can be swapped on the primary as well as on the secondary audio channel. It is also possible to digitise the mono + AM on the secondary audio channel.
Further it is possible to select the AM signal on the analogue audio outputs independently from the AM signal that is selected for the secondary (digital) audio channel.
Three audio output selectors are responsible for the content of the Line, SCART1, and SCART2 outputs. These selectors allow selection of the output out of five L+R inputs, two mono signals (AM internal or AM external) and two externally connected DSND streams.

SIF switching

SIF (Sound Intermediate Frequency) switching allows selecting between internal or external SIF signals.

AD Converters

The second part of the MPIF is responsible for conversion of the chosen signals into digital signals and grouping them into three data streams. Each data stream handles both video and audio. These data streams are fed into three data links and send via I2D to the outside.

The MPIF contains four video ADCs for analogue and digital video broadcast signals. The clock frequency for these ADCs is either 27 MHz or 54 MHz. In some cases, two analogue signals are multiplexed at the input of one ADC. In these cases, the clock frequency of the ADCs is 54 MHz, while the sample frequency for each of the two signals is 27 MHz.

The sample frequency for standard 1fH video signals is 27 MHz. For the YUV channel the sample frequency of the U and V components is half the sample frequency of the Y signal. For 2fH YPbPr or RGB input signals (for instance 480p or 1080i ATSC signals), the frequency that is used to sample the YUV signals is twice as high as for 1fH signals. The sample frequency is 54 MHz for Y and 27 MHz for U and V.
Due to the high sample frequency, two data links are needed for transport of the video data to the digital video processor.

I2D data link

The digital interface between MPIF and AVIP is called Data Link (or I2D Link). Data Link is a pin efficient, EMC friendly and power efficient serial interface that transfers the data from MPIF to AVIP over three Data Link interfaces. Each Data Link has a data signal and a strobe signal. The synchronisation information is distributed over the data and the strobe signal. To minimise EMC, both signal outputs are low voltage differential swing signals, with a swing of about 300 mV. Each Data Link has four lines, one differential pair for the data, and one differential pair for the strobe. The data rate is 594 Mbit/s. Each Data Link can carry two 27 MHz sampled video streams (or one 54 MHz sampled 2fH video stream) and two audio channels sampled at 6.75 MHz.

In the MPIF, the (video and audio) data to be transmitted is multiplexed in an output register of 42 bits. The content of that 42 bits register is serial transmitted on one of the three data links. In the AVIP, the serial data is de-multiplexed into parallel streams. The data on the data link is divided in several groups of signals (video, audio and strobe signals). Obvious it is important that the transmitter and receiver are in the same transmitting mode

Data links can operate in two different modes called:
1. Normal mode.
2. YUV2fH.

Normal mode

In the normal mode the content of the data links is as follows:

Data Stream	Video	Audio
1	CVBS/YC primary	(L+R) primary
2	YUV 1fH	(L+R) secondary
3	CVBS secondary	SIF
Data link Mode bit: DM= 0		

In the normal mode the data links can handle up to three video signals: CVBS or YC signal from the primary video selector, CVI 1fH source selected on the CVI switch, and CVBS signal from the secondary video selector.

YUV 2fH mode

In the YUV 2fH mode (higher bandwidth signal) the data links content is as follows:

Data Stream	Video	Audio
1	Y 2fH	(L+R) primary
2	UV 2fH	(L+R) secondary
3	CVBS secondary	SIF
Data link Mode bit: DM= 1		

The data link 1 can output only one of two input signals: the output of the primary video selector or the Y output of the CVI switch. Only one can be active at a moment, and that is determined by the data link mode bit (DM). It means, that for data links working in YUV 2fH mode, the data link 1 carries the Y component of the YUV 2fH signal, the data link 2 carries the UV component, and the data link 3 contains the signal that is connected through the secondary video selector.

9.5 AVIP (PNX 2000)

9.5.1 Introduction

The AVIP receives the digital data via the I2D link (coming from MPIF). It reformats this data and maps (synchronises) the data to the clock of the AVIP. Then a digital AGC is passed. After this, the video decoding is performed in the VIDDEC-block of the AVIP. The decoded video is sent to an output block, which formats the data to an ITU-656 compatible standard data stream.
The AVIP power supply is 1.8 V and 3.3 V. It uses a clock of 13.5 MHz coming from the VIPER. The AVIP is I^2C driven. Initialisation of this IC begins with a hard reset (MIPS-RESET) provided by the VIPER. Besides video decoding, the AVIP is also used for decoding and presentation of all audio output streams in the system.

9.5.2 Block Diagrams

Below the main functions and features in the AVIP for video and audio are given.

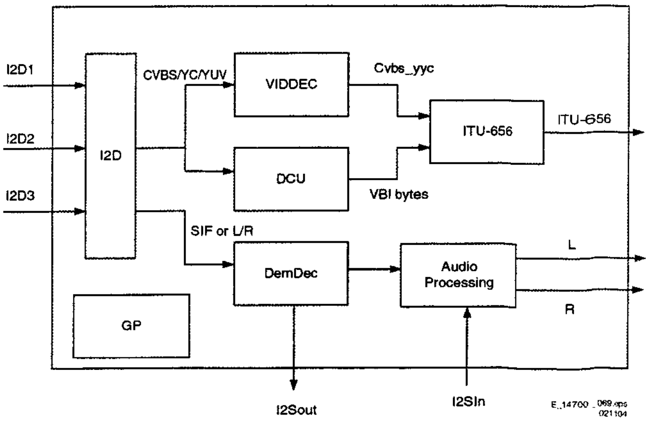


Figure 9-8 AVIP block diagram

Main AVIP function:

- I2D receiver.
- Colour decoding into ITU-601compatible format (1fH/2fH).
- Interface with 3D comb filter (called Columbus in this chassis).
- VBI data capture (Teletext, ...).
- ITU-656 formatting.
- Audio demodulation and decoding.
- Audio processing and D/A conversion.

I2D Receiver

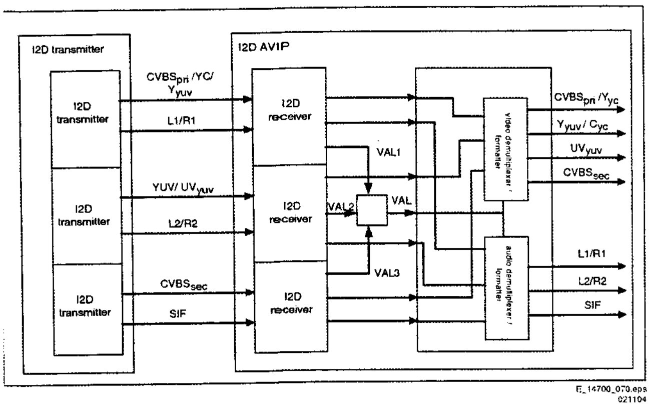

I2D transmitter
I2D transmitter
I2D transmitter
I2D transmitter
I2D AVIP
CVBS$_{pri}$ /YC/ Y$_{yuv}$
L1/R1
YUV/ UV$_{yuv}$
L2/R2
CVBS$_{sec}$
SIF
I2D receiver
I2D receiver
I2D receiver
VAL1
VAL2
VAL
VAL3
video demultiplexer / formatter
audio demultiplexer / formatter
CVBS$_{pri}$ /Y$_{yc}$
Y$_{yuv}$ / C$_{yc}$
UV$_{yuv}$
CVBS$_{sec}$
L1/R1
L2/R2
SIF
E_14700_070.eps
021104

Figure 9-9 I2D receiver block diagram

The receiver block gets the serial data stream and converts it to a parallel stream. This parallel data is fed to the "de-multiplexer and formatter " block where the selected audio/ video stream is forwarded to the video and audio decoder for further processing. This communication bus is completely digital and very difficult to monitor. It is however possible to check the correct functioning of the I2D link via the DRND-bits.

The I2D link has the following characteristics.

- The data-link runs at 297 MHz / 594 Mbps.
- The driver rise/fall time is around 200 ps.
- The data-link uses differential signals.

VIDDEC (Video Decoder)

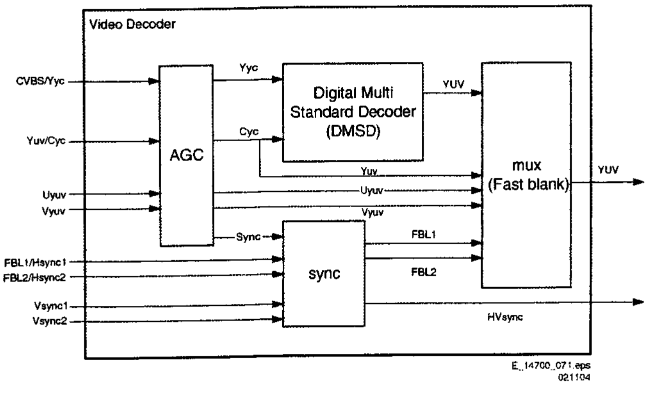

Video Decoder
CVBS/Yyc
Yuv/Cyc
Uyuv
Vyuv
FBL1/Hsync1
FBL2/Hsync2
Vsync1
Vsync2
AGC
Yyc
Cyc
Digital Multi Standard Decoder (DMSD)
YUV
Yuv
Uyuv
Vyuv
Sync
sync
FBL1
FBL2
mux (Fast blank)
YUV
HVsync
E_14700_071.eps
021104

Figure 9-10 VIDDEC block diagram

The CVBS/YC/YUV signals (coming from the I2D receiver block) enter the DMSD block (Digital Multi Standard Decoder) via the AGC (Automatic Gain Control) block. The multiplexer block (MUX) takes care of the correct output signal. The sync signals are processed in the sync block.

The VIDDEC has the following main functions:

- Multi standard colour decoder.
- Automatic system recognition.
- Fully programmable static or automatic (AGC) for all analogue video base band signals.
- AGC on sync amplitude in digital domain.
- Selectable peak white control.
- AGC for chrominance (PAL and NTSC only).
- Programmable Luminance and Chrominance bandwidth for CVBS and Y/C sources.
- Programmable clamp window for the selected video base band signals.
- Digital PLL for synchronisation on 2fH and ATSC standards.
- Horizontal (including 3-level sync for 2fH) and vertical sync detection.
- Automatic detection of 50/60Hz ATSC field frequency.
- Adaptive 2/4-line delay comb filter for two-dimensional Chrominance/Luminance separation.
- Copy protected source detection according to MacroVision up to version 7.01
- Possibility of RGB insertion through fast blanking in CVBS input mode, not in Y/C.

DCU (Data Capturing Unit)

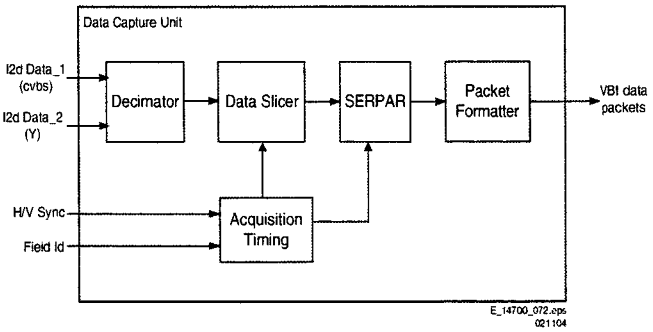

Data Capture Unit
I2d Data_1 (cvbs)
I2d Data_2 (Y)
H/V Sync
Field Id
Decimator
Data Slicer
SERPAR
Packet Formatter
Acquisition Timing
VBI data packets
E_14700_072.eps
021104

Figure 9-11 DCU block diagram

The purpose of this block is to acquire digital data (containing Teletext, Closed Captions, ...) from a CVBS/Y/C video input source. It performs processing on the received data and provides the data to the ITU-656 formatter unit.
The decimator reduces the sample rate (from 27 MHz to 13.5 MHz) of the incoming digitised CVBS or Y data stream from the I2D receiver. From the video input, the data slicer reconstructs the transmitted bit stream and associated clock. The SERPAR block converts the serial bits, coming from the data slicer, into parallel bytes. The packet processor performs data decoding and some error correction, assembles received bytes into packet structure, and streams out the data to the ITU-656 formatter.
The acquisition-timing block locks onto sync signals, and provides timing information to the other blocks of the data capture unit.

ITU656 Output Formatter

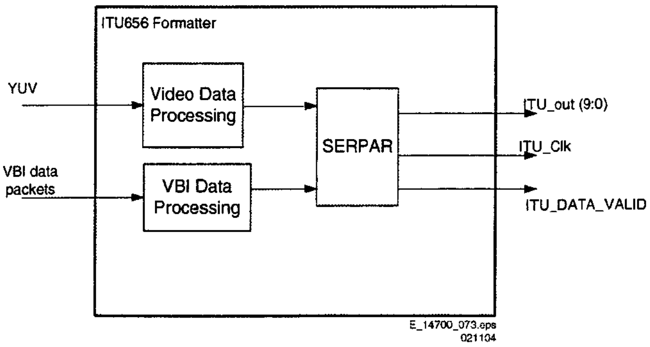

ITU656 Formatter
YUV
VBI data packets
Video Data Processing
VBI Data Processing
SERPAR
ITU_out (9:0)
ITU_Clk
ITU_DATA_VALID
E_14700_073.eps
021104

Figure 9-12 ITU656 formatter block diagram

The ITU656 formatter gets YUV data as video input signal, coming from the VIDDEC block. These YUV data are either decoded CVBS signals, matrixed RGB signals, or YUV input signals. The second input data are VBI sliced data coming from the DCU. The output of the ITU delivers a data stream, which is ITU-601/656/1364 compliant with exception of the CRC and the data valid line and includes video as well as the VBI data.

DEMDEC (Demodulator and Decoder)

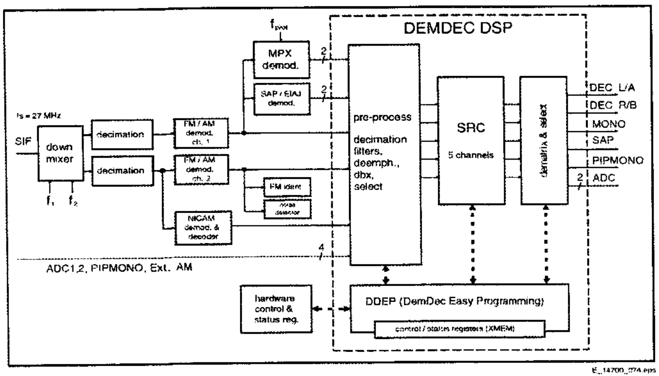

DEMDEC DSP
f_pilot
MPX demod.
SAP / EIAJ demod.
fs = 27 MHz
SIF
down mixer
f1
f2
decimation
decimation
FM / AM demod. ch. 1
FM / AM demod. ch. 2
FM ident
noise detector
NICAM demod. & decoder
2
2
4
ADC1,2, PIPMONO, Ext. AM
pre-process
decimation filters, deemph., dbx, select
SRC
5 channels
dematrix & select
DEC L/A
DEC R/B
MONO
SAP
PIPMONO
ADC
hardware control & status reg.
DDEP (DemDec Easy Programming)
control / status registers (XMEM)
E_14700_074.eps
031104

Figure 9-13 DEMDEC block diagram

The demodulator and decoder (DEMDEC) is responsible for demodulating and decoding incoming SIF signals.

The main features of the DEMDEC are:
- Demodulator and Decoder Easy Programming (DDEP).
- Auto standard detection (ASD).
- Static Standard Selection (SSS).
- DQPSK demodulation for different standards, simultaneously with 1-channel demodulation.
- NICAM decoding (B/G, I, D/K, and L standard).
- Two-carrier multi standard FM demodulation (B/G, D/K and M standard).
- Decoding for three analogue multi-channel systems (A2, A2+ and A2*) and satellite sound.
- Adaptive de-emphasis for satellite FM.
- Optional AM demodulation for system L, simultaneously with NICAM.
- Identification A2 systems (B/G, D/K and M standard) with different identification time constants.
- FM pilot carrier present detector.
- Monitor selection for FM/AM DC values and signals, with peak and quasi detection option.
- BTSC MPX decoder.
- SAP decoder.
- dBx noise reduction.
- Japan (EIAJ) decoder.
- FM radio decoder.
- Soft mute for DEMDEC outputs DEC, MONO, and SAP.
- FM over modulation adaptation option to avoid clipping and distortion.
- Sample rate conversion (SRC) for up to three demodulated terrestrial audio signals. It is possible to process SCART signals together with demodulated terrestrial signals.

Audio Processing

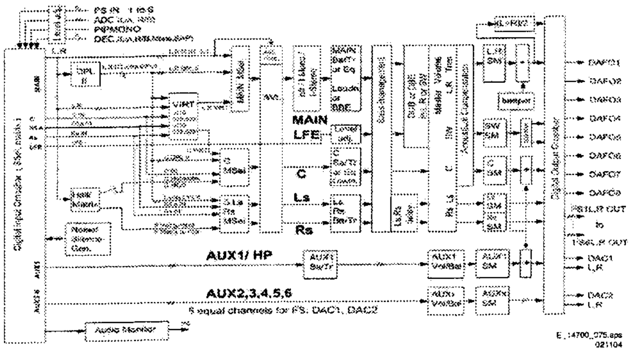

PIPMONO
MAIN
LFE
C
Ls
Rs
VIRT
beeper
AUX1/ HP
AUX2,3,4,5,6
5 equal channels for FS, DAC1, DAC2
DAC1
L,R
DAC2
L,R
Audio Monitor
E_14700_075.eps
021104

Figure 9-14 Audio processing block diagram

Main features are:
- Automatic Volume Level (AVL) control.
- Smooth volume control.
- Master volume control and Balance.
- Soft mute.
- Loudness.
- Bass, Treble.
- Dynamic Bass Enhancement (DBE).
- Dynamic Ultra Bass (DUBII).
- Non-processed subwoofer.
- 5-band equalizer.
- Acoustical compensation.
- Programmable beeper.
- Noise generator for loudspeaker level trimming.
- Pseudo hall/matrix function.
- Dolby ProLogic delay.
- Incredible Mono.
- Incredible Stereo.
- Virtual Dolby Surround (VDS 522, 523).
- Virtual Dolby Digital (VDD 522, 523).
- Bass Redirection according to Dolby specifications.
- Digital crossbar switch for all digital signal sources and destinations.
- Output crossbar for exchange of channel processing functionality.
- Digital audio input interface (stereo I2S input interface).
- Digital audio output interface (stereo I2S output interface).
- Voice recognition output interface (stereo I2S output interface).
- Audio monitor for level detection.
- 8 audio DACs for six channel loudspeaker outputs and stereo headphones output.
- Audio DACs for stereo SCART output and stereo LINE output.
- Serial data link interface for interfacing with the analogue multi-purpose interface IC PNX3000 (MPIF).

9.6 COLUMBUS (Comb Filter)

9.6.1 Introduction

The COLUMBUS (Colour Luminance Baseband Universal Subsystem) is a 2D/3D COMBFILTER.

COLUMBUS feature overview:
- 2D/3D Comb filter for PAL and NTSC.
- Spatial/Temporal Noise reduction.
- Dual Noise meter.
- Demo mode (horizontal split screen) for all features separately.
- ITU-656 style input and output.
- I^{2}C interface.
- SNERT interface.
- Boundary Scan Test interface.
- Full 9-Bit processing.
- Internal test pattern for Service/Debugging purposes.

For a detailed description of the COLUMBUS, please refer to the EM5.3E manual (order code 3122 785 14600).

9.6.2 Block Diagram

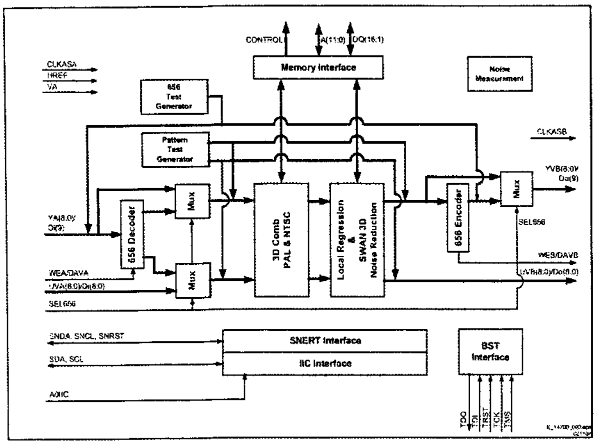
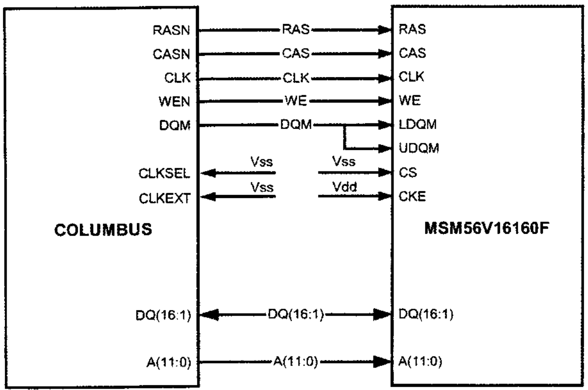

CONTROL
A(11:0)
DQ(16:1)
Memory Interface
Noise Measurement
CLKASA
HREF
VA
656 Test Generator
Pattern Test Generator
CLKASB
YVB(8:0)/ Do(9)
YA(8:0)/ Di(9)
656 Decoder
Mux
3D Comb PAL & NTSC
Local Regression & SWAN 3D Noise Reduction
656 Encoder
Mux
SEL656
WEB/DAVB
UVB(8:0)/Do(8:0)
WEA/DAVA
UVA(8:0)/Di(8:0)
SEL656
SNDA, SNCL, SNRST
SNERT Interface
SDA, SCL
IIC Interface
A0IIC
BST Interface
TDO
TDI
TRST
TCK
TMS

Figure 9-15 COLUMBUS internal block diagram

Memory Interface

In figure "COLUMBUS-Memory Interface", the interface is given between the COLUMBUS and the 16MBit SDRAM (for 3D comb filtering). If CLKSEL is connected to ground, the internal clock/PLL of the COLUMBUS is used. If CLKSEL is connected to VDD an external clock must be applied through the CLKEXT pin.


RASN
CASN
CLK
WEN
DQM
CLKSEL
CLKEXT
COLUMBUS
DQ(16:1)
A(11:0)
RAS
CAS
CLK
WE
DQM
Vss
Vss
Vss
Vdd
DQ(16:1)
A(11:0)
RAS
CAS
CLK
WE
LDQM
UDQM
CS
CKE
MSM56V16160F
DQ(16:1)
A(11:0)

E_14700_084.eps
111104

Figure 9-16 COLUMBUS-Memory Interface

AVIP and VIPER Interface

In figure "COLUMBUS-AVIP/VIPER interface", the interface is sketched in an AVIP/VIPER environment. The not used inputs from the Columbus can be connected to VSS or VDDS. The SEL656 pin must be active "high" (tied to VDDS).

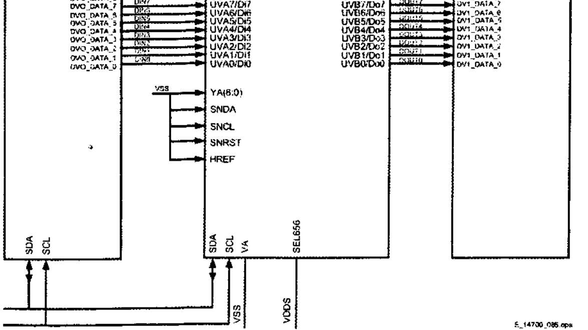

AVIP
COLUMBUS
VIPER-II
WEA/DAVA
DVO_CLK
DVO_VALID
DVO_DATA_9
DVO_DATA_8
DVO_DATA_7
DVO_DATA_6
DVO_DATA_5
DVO_DATA_4
DVO_DATA_3
DVO_DATA_2
DVO_DATA_1
DVO_DATA_0
DIN9
DIN8
DIN7
DIN6
DIN5
DIN4
DIN3
DIN2
DIN1
DIN0
CLKASA
WEA/DAVA
YA0/DI9
UVA8/Di8
UVA7/Di7
UVA6/Di6
UVA5/Di5
UVA4/Di4
UVA3/Di3
UVA2/Di2
UVA1/Di1
UVA0/Di0
CLKASB
WEB/DAVB
YB0/Do9
UVB8/Do8
UVB7/Do7
UVB6/Do6
UVB5/Do5
UVB4/Do4
UVB3/Do3
UVB2/Do2
UVB1/Do1
UVB0/Do0
DOUT9
DOUT8
DOUT7
DOUT6
DOUT5
DOUT4
DOUT3
DOUT2
DOUT1
DOUT0
DV1_CLK
DV1_VALID
DV1_DATA_9
DV1_DATA_8
DV1_DATA_7
DV1_DATA_6
DV1_DATA_5
DV1_DATA_4
DV1_DATA_3
DV1_DATA_2
DV1_DATA_1
DV1_DATA_0
VSS
YA(8:0)
SNDA
SNCL
SNRST
HREF
SDA
SCL
SDA
SCL
VA
SEL656
VSS
VDDS

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Figure 9-17 COLUMBUS-AVIP/VIPER interface

The SEL656 pin is connected to VDDS (= 1), so the ITU656 interface is selected for interfacing to AVIP and VIPER.

Control Register Interface

The control registers are accessed either via IIC. Most signals that can be written via I²C are double buffered. The Fast I²C interface implemented on the COLUMBUS is a 5V compliant, 400 kHz slave receiver/transmitter. The I²C will not be blocked during voltage shorts or opens.

For the system dependent parameters of the 3D-Comb filter, five register banks are present. Data can be written in one of the banks via I²C, by programming bits [2:0] of the SYSTEM_SELECT register. The bits [6:4] of the SYSTEM_SELECT register select, which register bank is used by Columbus to define the filter settings.

Bank number	System
0	PAL B, G, H, I, D, K
1	PAL M
2	PAL N
3	NTSC
4	Bypass

Digital identification ID

Presence and version of the device can be checked by reading the digital identification ID using the I²C interface.

Internal test generators (see block diagram)

There are two test generators inside the COLUMBUS chip:

- The "656 test generator" generates a 656 compliant stream and is used for testing the functionality of the 656 encoder and decoder. The 656 stream can be injected at the front end or the back end of the chip.
- A second internal test pattern generator enables testing of the device and attached external memory (if present). The test pattern generator signal can be inserted at the front end of the chip (passing through the 3D Comb and noise reduction system and external memory) or at the back end of the chip. Test patterns are available for both PAL/ SECAM and NTSC systems.

9.7 VIPER II (PNX 8550)

9.7.1 Introduction

The PNX8550 is a highly integrated media processor intended for deployment in analogue, digital and hybrid TV receivers. It can be used for 100 Hz interlaced as well as 60 Hz progressive screens. It is fully capable of performing advanced video improvement algorithms, such as Digital Natural Motion™, on Standard Definition analogue or digital sources. It includes an HD capable de-interlacer for converting interlaced HD transmission signals to progressive output for driving wide-XGA class Plasma or LCD displays. Two 32-bit 240 MHz VLIW media processors, referred to as the TriMedia TM3260 CPU core, carry out the advanced video improvement processing as well as all audio operations. Fixed hardware functions perform stable core video functions, such as picture level MPEG2 decoding, scaling, image composition and pixel post processing.

The PNX8550 provides a primary digital (YUV or RGB) output to connect to the display specific output processor. In addition, a secondary analogue video output (CVBS or S-Video) for a VCR is available. This is the so-called DENC-out. It can operate either in analogue PAL/NTSC or digital mode.

9.7.2 Block Diagram

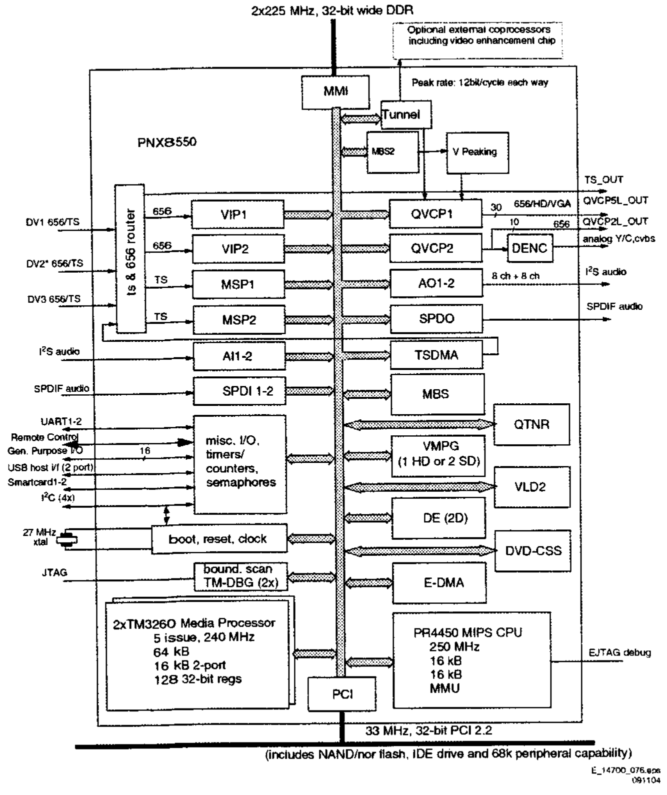
2x225 MHz, 32-bit wide DDR
Optional external coprocessors including video enhancement chip
Peak rate: 12bit/cycle each way
MMI
Tunnel
PNX8550
MBS2
V Peaking
TS_OUT
QVCP5L_OUT
QVCP2L_OUT
analog Y/C,cvbs
656/HD/VGA
30
10
656
DV1 656/TS
DV2* 656/TS
DV3 656/TS
ts & 656 router
656
656
TS
TS
VIP1
VIP2
MSP1
MSP2
QVCP1
QVCP2
DENC
AO1-2
8 ch + 8 ch
I²S audio
SPDO
SPDIF audio
I²S audio
AI1-2
TSDMA
SPDIF audio
SPDI 1-2
MBS
QTNR
UART1-2
Remote Control
Gen. Purpose I/O
16
USB host i/f (2 port)
Smartcard1-2
I²C (4x)
misc. I/O, timers/ counters, semaphores
VMPG (1 HD or 2 SD)
VLD2
DE (2D)
27 MHz xtal
boot, reset, clock
DVD-CSS
JTAG
bound. scan TM-DBG (2x)
E-DMA
2xTM3260 Media Processor
5 issue, 240 MHz
64 kB
16 kB 2-port
128 32-bit regs
PR4450 MIPS CPU
250 MHz
16 kB
16 kB
MMU
EJTAG debug
PCI
33 MHz, 32-bit PCI 2.2
(includes NAND/nor flash, IDE drive and 68k peripheral capability)
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Figure 9-18 VIPER II internal block diagram

Control

An embedded MIPS32 processor (PR4450) running at 266 MHz is available to run the Operating System. The PR4450 processor is primarily responsible for running the demand paged graphics-intensive operating system, while the TM3260 media processors are responsible for running all real-time media functions. All hardware resources inside the PNX8550 are accessible by both the MIPS processor and the TM3260 CPUs. A "'sandbox" style system protection provision ensures that selected MIPS memory regions and critical peripherals cannot be corrupted or inspected.

VIP (Video Input Processor)

The Video Input Processors (VIP) handles incoming digital video and processes it for use by other components of the PNX8550. It provides the following functions:

- Receives 10-bit YUV4:2:2 digital video data from the selected DVx video port (input signal coming from the AVIP or Columbus IC output). The data is dithered down to in-memory 8-bit data format.
- Performs horizontal down scaling or up scaling by 2x (not available in HD video capture mode).
- Provides an internal Test Pattern Generator with NTSC, PAL, and variable format support.
- Acquire VBI data using a separate acquisition window from the video acquisition window.
- ANC header decoding or window mode for VBI data extraction.
- Interrupt generation for VBI or video written to memory input mode.
- Colour space conversion (mutual exclusive with horizontal scaling).
- Raw data mode captures of 8- or 10-bit data.

MBS (Memory Based Scaler)

The PNX8550 contains a Memory Based Scaler that performs operation on images in main memory. The MBS can either be controlled task by task by a TM3260, or it can be given a list of de-interlacing and scaling tasks. It reads images from memory, performs a transformation, and writes the result back in memory.

The MBS main features are:

- De-interlacing using either a median, 2-field majority select, or 3-field majority select algorithm with an edge detect/correct post-pass (these three provide increasing quality, at expense of increased bandwidth).
- Edge detect/correct on an input frame that has been software de-interlaced (this provides future capabilities in case we develop a better core de-interlacer than 3-field majority select).
- Horizontal and vertical scaling (on the input image, or on the result of edge detect/correct stage).
- Linear and non-linear aspect ratio conversion.
- Anti-flicker filtering.
- Conversions from any input pixel format to any non-indexed pixel format, including conversions between 4:2:0, 4:2:2 and 4:4:4, indexed to true colour conversion, colour expansion / compression, de-planarisation / planarisation (to convert between planar and packed pixel formats), programmable colour space conversion.

Supported video measurement functions during scaling or de-interlacing pass:

- Gather a histogram of luminance values (this data is used by software to control histogram modification).
- Measure noise level inside a rectangular window.
- Measure the lowest level luminance within a rectangular window (used to control black stretch in QVCP).
- Measure UV bandwidth inside a rectangular window.

QTNR (Quality Temporal Noise Reduction and Video Measurement)

The QTNR block has two primary functions: Temporal Noise Reduction: reading two video fields from memory, "current" (noisy) and "previous" (noise reduced) and producing a noise-reduced version of "current" in memory. While doing this, or as a separate "measurement only" pass, perform video measurements:

- Gather a histogram of luminance values (this data is used by software to control histogram modification).
- Measure noise level inside a rectangular window.
- Measure the lowest level luminance within a rectangular window (used to control black stretch in QVCP).
- Measure UV bandwidth inside a rectangular window.
- Measure the position of top and bottom black bars in the image.

QVCP (Quality Video Composition Processor)

The PNX8550 contains two QVCPs, which are responsible for combining and displaying video and graphics images from main memory. The primary QVCP serves as the main display pipeline, the second one is targeted to be connected to a record device (VCR). The primary QVCP allows composition of up to five layers, and can output in ITU-656/HD/VGA format in 10 bits per component up to 81 Mpix/s.

The secondary QVCP allows composition of up to two layers, can output in 656 10-bit component mode up to 81 MHz (40.5 Mpix/s). The secondary QVCP is connected to an on-chip Digital Video Encoder (DENC), allowing direct analogue CVBS or S-video output.
In analogue output mode, standard definition interlaced NTSC or PAL is supported (SCART2-out signal, for VCR-recording). The encoder has two DACs. DAC1 provides CVBS or luminance for S-video. DAC2 provides chrominance for S-video.
Internal sensors allow software to test loading on the S-video Chrominance line to decide whether to output luminance or CVBS on DAC1.

The primary and secondary QVCP each contain a series of layers and mixers. The QVCP creates a series of display data layers (pixel streams) and mixes them logically from back to front to create the composite output picture.

Some of the features the QVCP provides are:
- Video Quality Enhancement.
- Luminance Transient Improvement.
- Colour Dependent Sharpening.
- Horizontal Dynamic Peaking.
- Histogram Modification.
- Digital Colour Transient Improvement.
- Black Stretch.
- Skin Tone Correction.
- Blue Stretch and Green Enhancement.
- Video and Graphics horizontal up scaling.
- Colour space unification of all the display surfaces.
- Contrast and Brightness Control.
- Positioning of the various surfaces.
- Merging of the image surfaces (alpha blending and pixel selection based on chroma range keying).
- Gamma correction on the merged result.
- Screen timing generation adopted to the connected display requirements (SD-TV standards, HD-TV standards, progressive, interlaced formats).

9.8 LVDS Transmitter

The digital video output from the VIPER is connected to the display via an LVDS interface. This transmitter converts 28 bits of LVCMOS/LVTTL data into four LVDS (Low Voltage Differential Signalling) data streams. A phase-locked transmit clock is transmitted in parallel with the data streams over a fifth LVDS link. With every cycle of the transmit clock, 28 bits of input data are sampled and transmitted. At a transmit clock frequency of 85 MHz, 24 bits of RGB data and 3 bits of LCD timing and control data (FPLINE, FPFRAME, DRDY) are transmitted at a rate of 595 Mbps per LVDS data channel. Using a 85 MHz clock, the data throughput is 297.5 Mbytes/sec.

9.9 Stand-by Controller

9.9.1 Introduction

The main reason to use a Stand-by Controller was the high (> 1 Watt) power consumption in stand-by of the VIPER II IC.

The main tasks of the Stand-by Controller are:
- RC5/RC6 remote control handling.
- P50.
- Keyboard handling (Top Control, ON/OFF switch).
- Status detection on SCARTs.
- Detection and protection of the power supplies.
- SAM/SDM entering.
- Provide boot-scripts to the VIPER.
- Start-up behaviour of the set (sequentially enabling the power supplies).

9.9.2 Block Diagram

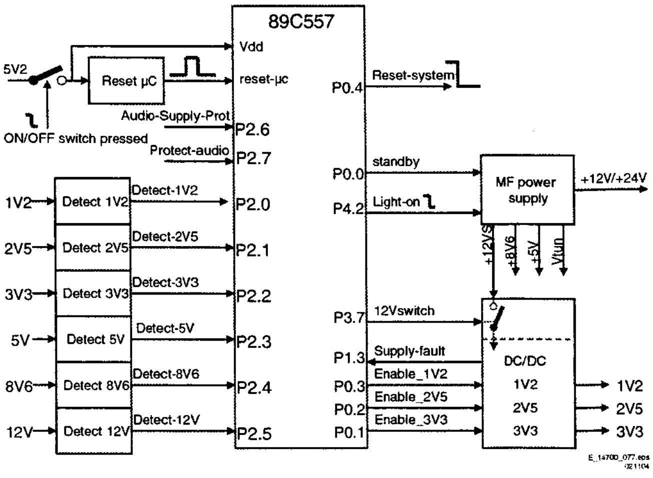


Figure 9-19 Stand-by processor block diagram

The Stand-by Controller is powered by the 5V2 voltage that becomes available when the user has pressed the ON/OFF switch. At that moment, it gets a RESET pulse and starts running. It needs a 16 MHz crystal oscillation to do so. By default all I/O lines of the controller are high, this state is also the state that will not trigger protections or cause supplies to rise, since enabling a supply requires that an I/O line is pulled "low". Also all protections are active "low".

9.9.3 Start-up Behaviour and Fault Detection

The Stand-by Microprocessor is responsible for the start-up of the VIPER, by providing the correct timing for the DC/DC converted voltages (for timing of DC/DC converter voltages see description in paragraph "Power Supply").
The +12V switch and the DC/DC converters are switched "on", via the enable line (active "low"). Once these voltages are switched "on", the Stand-by Controller is monitoring these voltages via a voltage detector circuit connected to port P2.x. When one of the voltages is missing, the fault detection will be active "low" on port P2.x. An error code will be written in the error buffer.
There is a common supply fault line; connected to port P1.3 (INT5) that is active "low" when there is a problem detected on one of the DC/DC power supplies driver circuits.
Two inputs (P2.6 and P2.7) are used for the Audio Supply protection and the DC protection from the audio amplifier.
The RESET_SYSTEM line is "low" in Stand-by and at Start-up to keep the VIPER in reset state. Once the VIPER core supply is available, the RESET_SYSTEM line will become "high". The VIPER is starting up and will provide a RESET-MIPS active "high" to the Stand-by Processor P3.3 (INT1), AVIP, and COLUMBUS.

9.9.4 I/O Stand-by processor

The inputs on the Stand-by Microprocessor are used to detect the AV status from the SCART or front inputs (see also the control block diagram in chapter 6 "Block diagrams,...").
An UART communication line via an electronic switch is available on a connector and will be used for Service to communicate with ComPair. The UART line is switched to the Stand-by Processor when the UART switch line is "high".

9.10 Abbreviation list

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
ANR	Automatic Noise Reduction: one of the algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information
ATSC	Advanced Television Systems Committee, the digital TV standard in the USA
ATV	See Auto TV
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way
AV	External Audio Video
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CEC	Consumer Electronics Control bus: remote control bus on HDMI connections
CL	Constant Level: audio output to connect with an external amplifier
COLUMBUS	COlour LUMinance Baseband Universal Sub-system
ComPair	Computer aided rePair
CSM	Customer Service Mode
CTI	Colour Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	See "E-DDC"
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFU	Directions For Use: owner's manual
DNR	Digital Noise Reduction: noise reduction feature of the set
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool: special remote control designed for service technicians
DVD	Digital Versatile Disc
DVI(-d)	Digital Visual Interface (d= digital only)
E-DDC	Enhanced Display Data Channel (VESA standard for communication channel and display). Using E-DDC, the video source can read the EDID information form the display.
EDID	Extended Display Identification Data (VESA standard)
EEPROM	Electrically Erasable and Programmable Read Only Memory
EMI	Electro Magnetic Interference
EPLD	Erasable Programmable Logic Device
EU	Europe
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FBL	Fast BLanking: DC signal accompanying RGB signals
FDS	Full Dual Screen (same as FDW)
FDW	Full Dual Window (same as FDS)
FLASH	FLASH memory
FM	Field Memory or Frequency Modulation
FTV	Flat TeleVision
Gb/s	Giga bits per second
G-TXT	Green TeleteXT
H	H_sync to the module
HD	High Definition
HDD	Hard Disk Drive
HDCP	High-bandwidth Digital Content Protection: A "key" encoded into the HDMI/DVI signal that prevents video data piracy. If a source is HDCP coded and connected via HDMI/DVI without the proper HDCP decoding, the picture is put into a "snow vision" mode or changed to a low resolution. For normal content distribution the source and the display device must be enabled for HDCP "software key" decoding.
HDMI	High Definition Multimedia Interface
HP	HeadPhone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
I2D	Integrated IC Data bus
I2S	Integrated IC Sound bus
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt Request
ITU-656	The ITU Radiocommunication Sector (ITU-R) is a standards body subcommittee of the International Telecommunication Union relating to radio communication. ITU-656 (a.k.a. SDI), is a digitised video format used for broadcast grade video. Uncompressed digital component or digital composite signals can be used. The SDI signal is self-synchronizing, uses 8 bit or 10 bit data words, and has a maximum data rate of 270 Mbit/s, with a minimum bandwidth of 135 MHz.

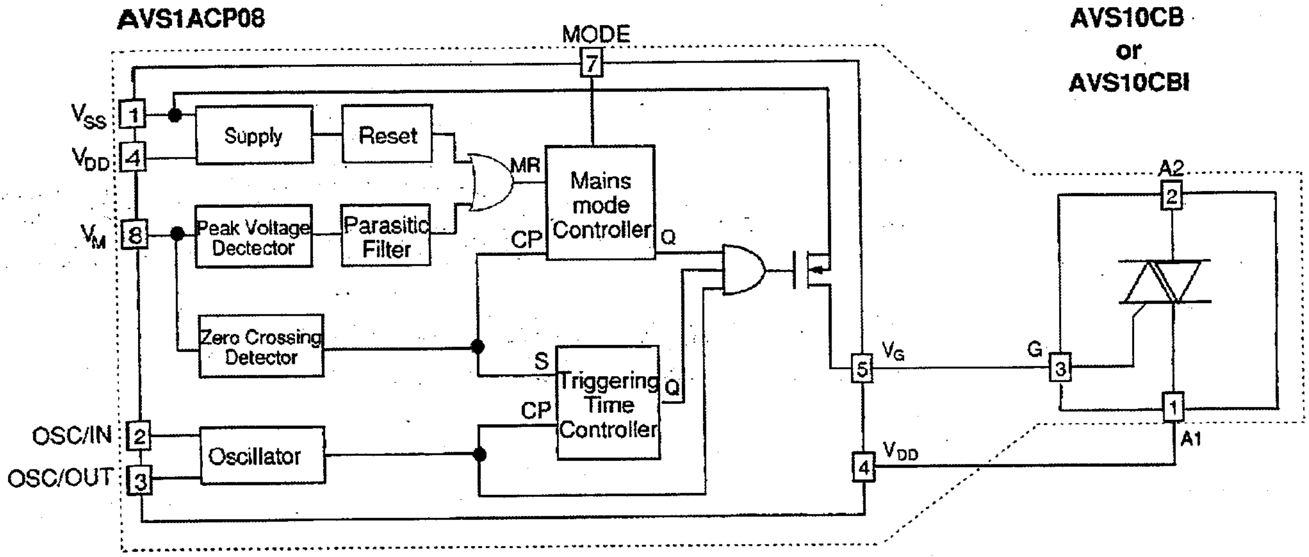
ITV	Institutional TeleVision, TV sets for hotels, hospitals etc.
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
LATAM	Latin America
LCD	Liquid Crystal Display
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Loudspeaker
LVDS	Low Voltage Differential Signalling
Mbps	Mega bits per second
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
MPEG	Motion Pictures Experts Group
MPIF	Multi Platform InterFace
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
NTC	Negative Temperature Coefficient, non-linear resistor
NTSC	National Television Standard Committee. Colour system mainly used in North America and Japan. Colour carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non-Volatile Memory: IC containing TV related data such as alignments
O/C	Open Circuit
OSD	On Screen Display
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)
P50	Project 50: communication protocol between TV and peripherals
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier= 4.433619 MHz) and South America (colour carrier PAL M= 3.575612 MHz and PAL N= 3.582056 MHz)
PCB	Printed Circuit Board (same as "PWB")
PCM	Pulse Code Modulation
PDP	Plasma Display Panel
PFC	Power Factor Corrector (or Pre-conditioner)
PIP	Picture In Picture
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
POR	Power On Reset, signal to reset the P
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PTC	Positive Temperature Coefficient, non-linear resistor
PWB	Printed Wiring Board (same as "PCB")
PWM	Pulse Width Modulation
QTNR	Quality Temporal Noise Reduction
QVCP	Quality Video Composition Processor
RAM	Random Access Memory
RGB	Red, Green, and Blue. The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced.
RC	Remote Control
RC5 / RC6	Signal protocol from the remote control receiver
RESET	RESET signal
ROM	Read Only Memory
R-TXT	Red TeleteXT
SAM	Service Alignment Mode
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
SCL	Serial Clock I2C
SCL-F	CLock Signal on Fast I2C bus
SD	Standard Definition
SDA	Serial Data I2C
SDA-F	DAta Signal on Fast I2C bus
SDI	Serial Digital Interface, see "ITU-656"
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers= 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switched Mode Power Supply
SOG	Sync On Green
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
SSB	Small Signal Board
STBY	STandBY
SOG	Sync On Green
SVGA	800x600 (4:3)
SVHS	Super Video Home System
SW	Software
SXGA	1280x1024
TFT	Thin Film Transistor
THD	Total Harmonic Distortion
TMDS	Transmission Minimised Differential Signalling
TXT	TeleteXT
TXT-DW	Dual Window with TeleteXT
uP	Microprocessor
UXGA	1600x1200 (4:3)
V	V-sync to the module
VCR	Video Cassette Recorder
VESA	Video Electronics Standards Association
VGA	640x480 (4:3)
VL	Variable Level out: processed audio output toward external amplifier
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
WXGA	1280x768 (15:9)
XTAL	Quartz crystal
XGA	1024x768 (4:3)
Y	Luminance signal
Y/C	Luminance (Y) and Chrominance (C) signal
YPbPr	Component video. Luminance and scaled colour difference signals (B-Y and R-Y)
YUV	Component video

9.11 IC Data Sheets

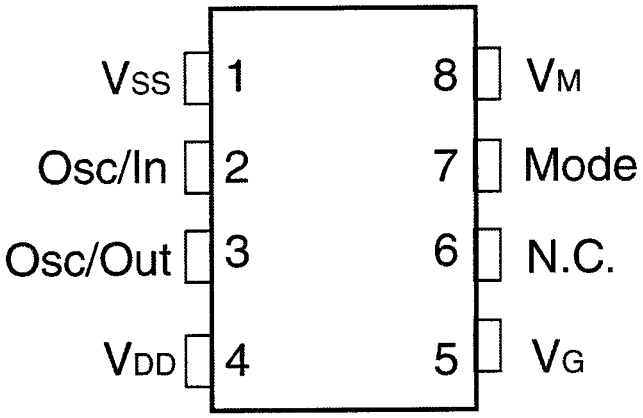
This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.11.1 Diagram A1, AVS1ACP08 (IC 7805)

BLOCK DIAGRAM


AVS1ACP08
MODE
7
AVS10CB
or
AVS10CBI
V_{SS} 1
V_{DD} 4
V_M 8
Supply
Reset
MR
Mains mode Controller
Q
CP
Peak Voltage Dectector
Parasitic Filter
Zero Crossing Detector
S
Triggering Time Controller
Q
CP
OSC/IN 2
OSC/OUT 3
Oscillator
5 V_G
4 V_{DD}
A2
2
G
3
1
A1

PIN CONFIGURATION


Vss 1
Osc/In 2
Osc/Out 3
VDD 4
8 VM
7 Mode
6 N.C.
5 VG

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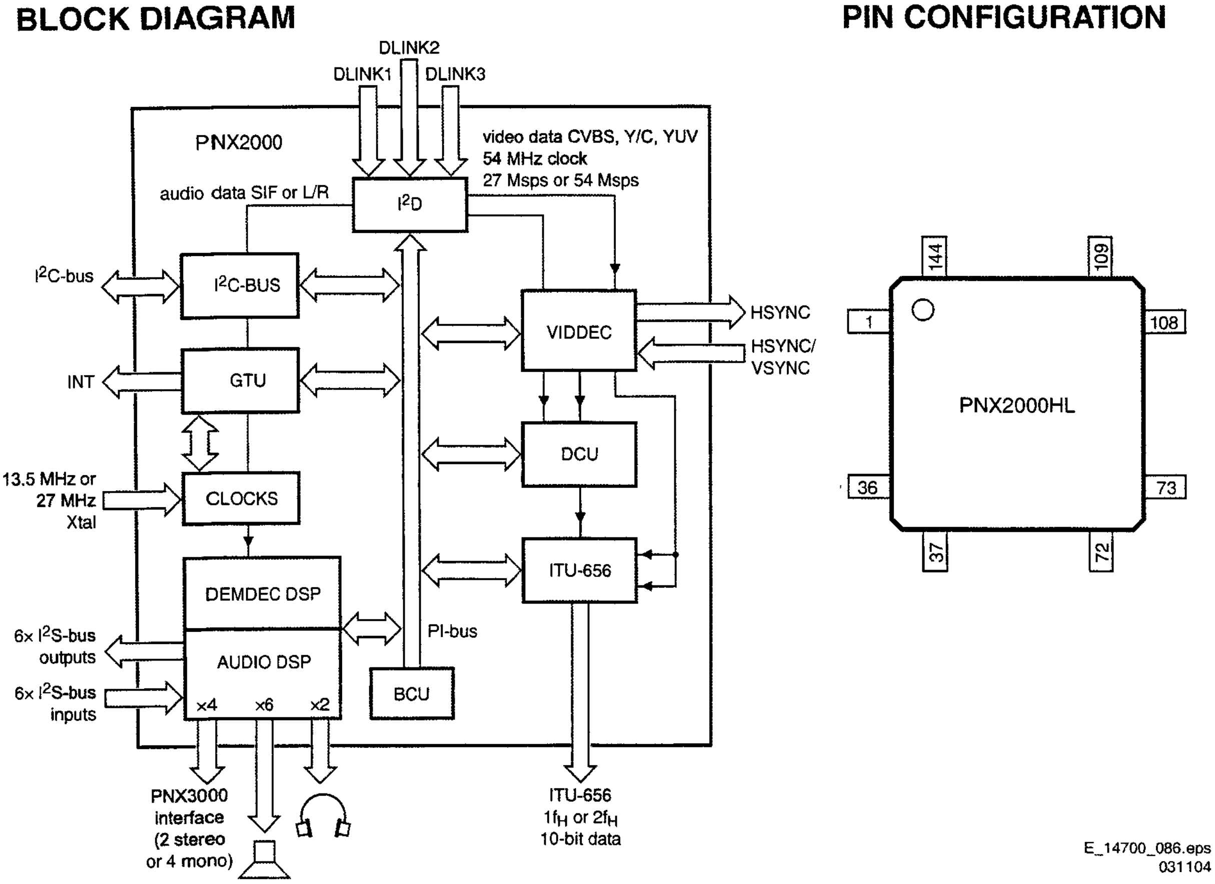
200804

Figure 9-20 Internal Block Diagram and Pin Layout

.11.2 Diagram B4D/B4E, PNX2000 (IC 7K80)


BLOCK DIAGRAM
PIN CONFIGURATION
DLINK2
DLINK1
DLINK3
PNX2000
video data CVBS, Y/C, YUV
54 MHz clock
27 Msps or 54 Msps
audio data SIF or L/R
I²D
I²C-bus
I²C-BUS
VIDDEC
HSYNC
HSYNC/
VSYNC
INT
GTU
DCU
13.5 MHz or
27 MHz
Xtal
CLOCKS
ITU-656
DEMDEC DSP
PI-bus
6x I²S-bus
outputs
AUDIO DSP
6x I²S-bus
inputs
x4
x6
x2
BCU
PNX3000
interface
(2 stereo
or 4 mono)
ITU-656
1f_H or 2f_H
10-bit data
144
109
1
108
PNX2000HL
36
73
37
72

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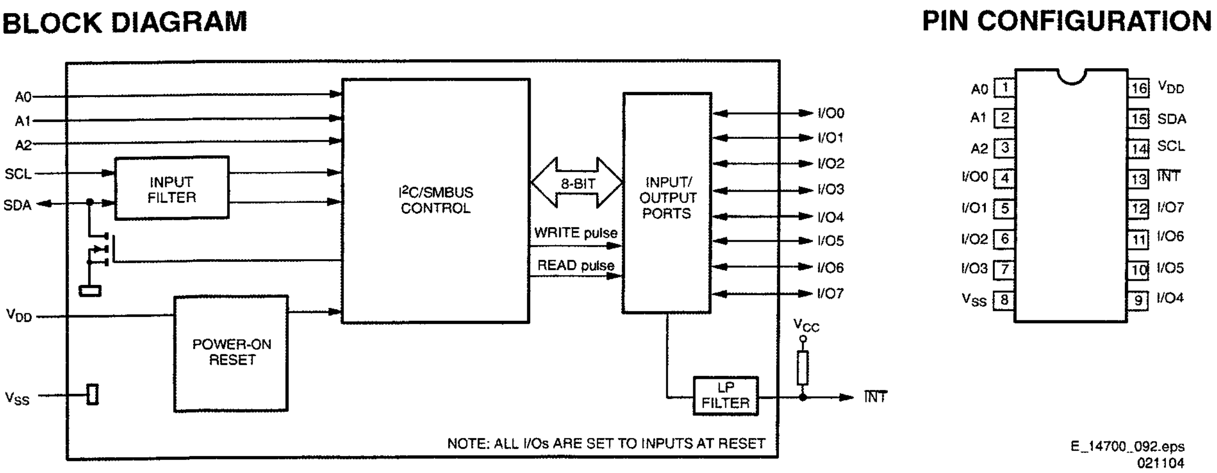
031104

Figure 9-21 Internal block diagram and pin configuration

9.11.3 Diagram B11B, PCA9554 (IC 7I55)


BLOCK DIAGRAM
PIN CONFIGURATION
A0
A1
A2
SCL
SDA
INPUT
FILTER
I²C/SMBUS
CONTROL
8-BIT
WRITE pulse
READ pulse
INPUT/
OUTPUT
PORTS
I/O0
I/O1
I/O2
I/O3
I/O4
I/O5
I/O6
I/O7
VDD
POWER-ON
RESET
VSS
VCC
LP
FILTER
INT
NOTE: ALL I/Os ARE SET TO INPUTS AT RESET
A0 1
A1 2
A2 3
I/O0 4
I/O1 5
I/O2 6
I/O3 7
VSS 8
16 VDD
15 SDA
14 SCL
13 INT
12 I/O7
11 I/O6
10 I/O5
9 I/O4

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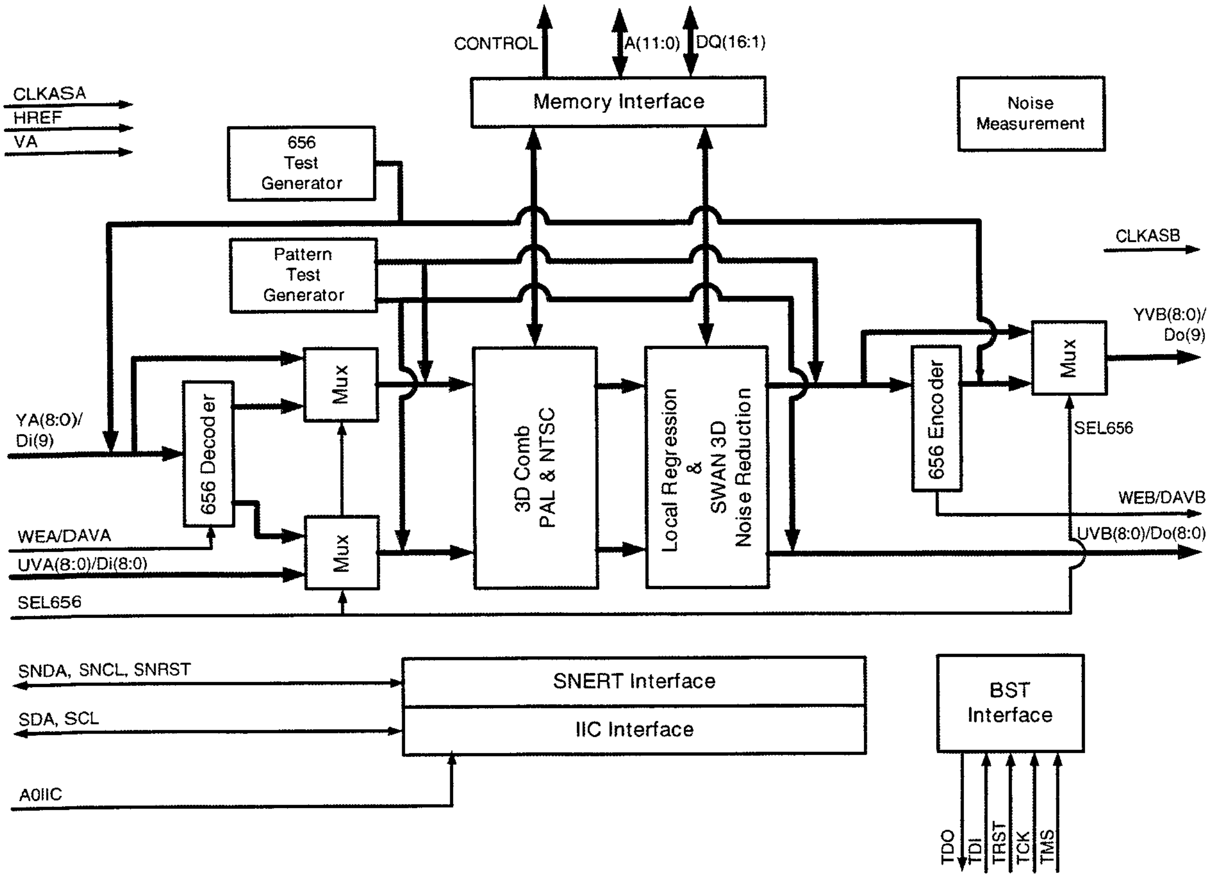
021104

Figure 9-22 Internal block diagram and pin configuration

9.11.4 Diagram B4F, T6TU5 (IC 7J50)

BLOCK DIAGRAM


CONTROL
A(11:0)
DQ(16:1)
Memory Interface
CLKASA
HREF
VA
656 Test Generator
Noise Measurement
CLKASB
Pattern Test Generator
YVB(8:0)/ Do(9)
Mux
YA(8:0)/ Di(9)
656 Decoder
3D Comb PAL & NTSC
Local Regression & SWAN 3D Noise Reduction
656 Encoder
Mux
SEL656
WEB/DAVB
WEA/DAVA
Mux
UVB(8:0)/Do(8:0)
UVA(8:0)/Di(8:0)
SEL656
SNDA, SNCL, SNRST
SNERT Interface
BST Interface
SDA, SCL
IIC Interface
A0IIC
TDO
TDI
TRST
TCK
TMS

PIN CONFIGURATION

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
A	WEB/ DAVB	UVA0 /Di0	UVA2 /Di2	UVA4 /Di4	UVA6 /Di6	UVA8 /Di8	SEL656	TST1	YA2	YA4	YA6	YA8	VA	HREF	SDA	A
B	YB8	VSS	UVA1 /Di1	UVA3 /Di3	UVA5 /Di5	UVA7 /Di7	YA0 /Di9	BISTEN	YA1	YA3	YA5	YA7	WEA/ DAVA	VSS	SCL	B
C	YB7	YB6	VSS	VDDS	VSS	VSS	VDDC	VDDC	VSS	VSS	VDDC	VDDS	VSS	SNDA	SNRST	C
D	YB5	YB4	VDDC	N.C.									VSS	SNCL	TCK	D
E	YB3	YB2	VSS										VDDC	TMS	TDO	E
F	TST2	YB1	VSS										VSS	TRST	TDI	F
G	CLKASB	YB0 /Do9	VDDS										VDDS	A0ICC	RESET	G
H	CLKASA	UVB8/ Do8	TST3										VDDC	CLK EXT	CLKSEL	H
J	UVB7 /Do7	UVB6/ Do6	VSS										VSS	CLK	WEN	J
K	UVB5 /Do5	UVB4/ Do4	VDDC										VSS	CASN	RASN	K
L	UVB3 /Do3	UVB2 /Do2	VSS										VDDS	DQM	DQ16	L
M	UVB1 /Do1	UVB0 /Do0	VDDS										VSS	DQ14	DQ15	M
N	AVD	N.C.	VDDS	VSS	VSS	VDDC	VSS	VDDS	VDDC	VSS	VDDS	VSS	VSS	VDDS	DQ13	N
P	AVS	VSS	A7	A9	A2	A0	A11	DQ7	DQ6	DQ4	DQ3	DQ1	VDDS	VSS	DQ12	P
R	A4	A5	A6	A8	A3	A1	A10	DQ8	VSS	DQ5	VSS	DQ2	DQ9	DQ10	DQ11	R
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

COLUMBUS TOP-VIEW

PPA Version 2.7

E_14700_087.eps
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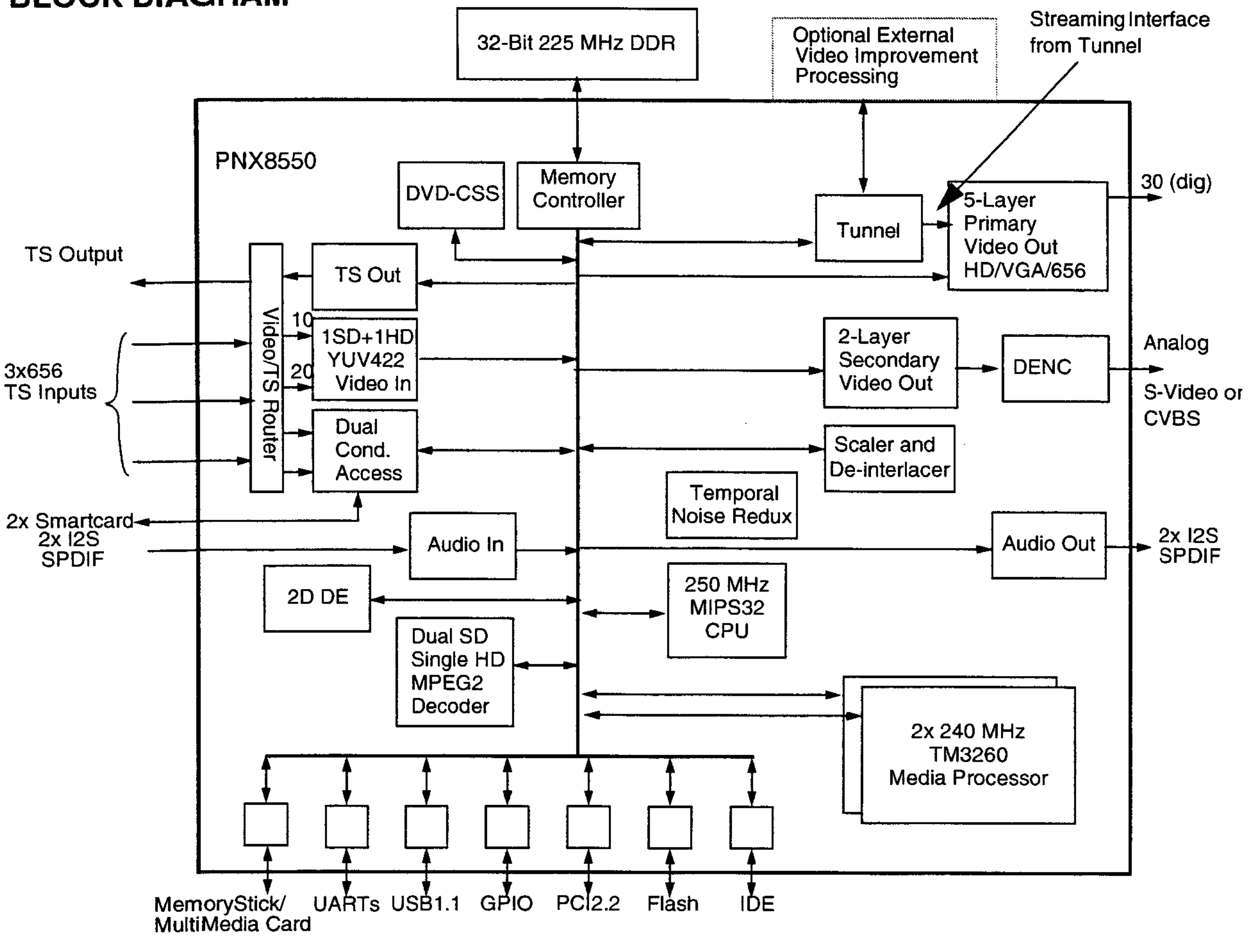
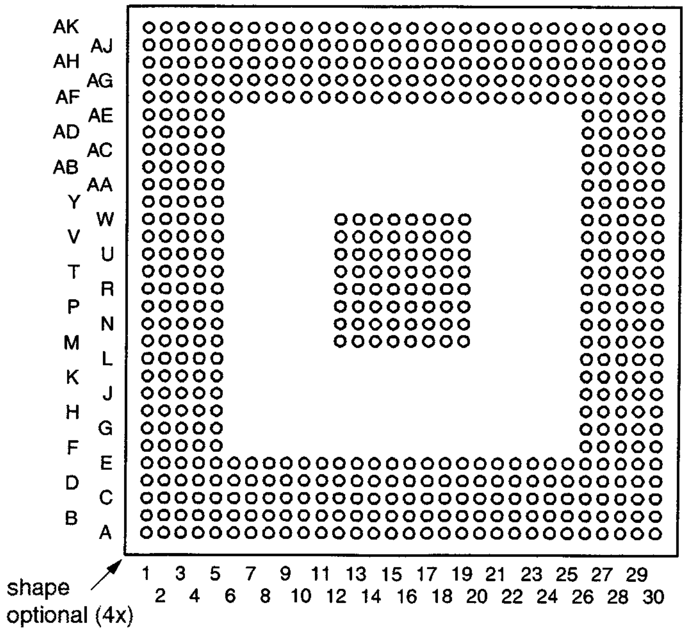
Figure 9-23 Internal block diagram and pin configuration

9.11.5 Diagram B6A/B6B/B6C/B6D, PNX8550 (IC 7V00)

BLOCK DIAGRAM


32-Bit 225 MHz DDR
Optional External Video Improvement Processing
Streaming Interface from Tunnel
PNX8550
DVD-CSS
Memory Controller
Tunnel
5-Layer Primary Video Out HD/VGA/656
30 (dig)
TS Output
TS Out
Video/TS Router
10
20
1SD+1HD YUV422 Video In
3x656 TS Inputs
2-Layer Secondary Video Out
DENC
Analog
S-Video or CVBS
Dual Cond. Access
Scaler and De-interlacer
Temporal Noise Redux
2x Smartcard
2x I2S SPDIF
Audio In
Audio Out
2x I2S SPDIF
2D DE
250 MHz MIPS32 CPU
Dual SD Single HD MPEG2 Decoder
2x 240 MHz TM3260 Media Processor
MemoryStick/ MultiMedia Card
UARTs
USB1.1
GPIO
PCI2.2
Flash
IDE

PIN CONFIGURATION


AK
AJ
AH
AG
AF
AE
AD
AC
AB
AA
Y
W
V
U
T
R
P
N
M
L
K
J
H
G
F
E
D
C
B
A
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
shape optional (4x)

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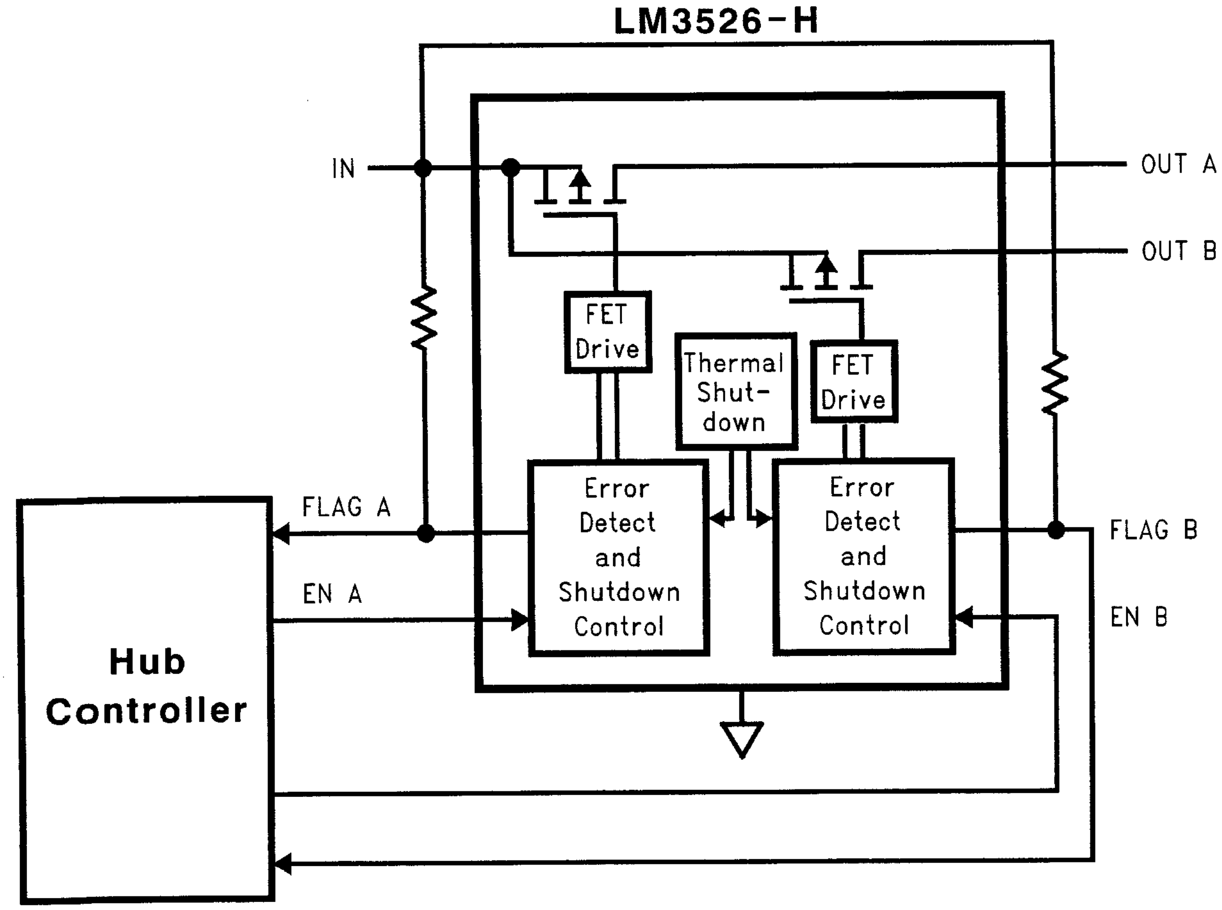
021104

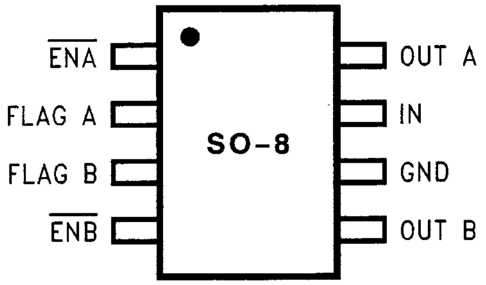
Figure 9-24 Internal block diagram and pin configuration

9.11.6 Diagram B6A, LM3526 (IC 7Q01)

BLOCK DIAGRAM


LM3526-H
IN
OUT A
OUT B
FET Drive
Thermal Shut-down
FET Drive
Error Detect and Shutdown Control
Error Detect and Shutdown Control
FLAG A
EN A
FLAG B
EN B
Hub Controller

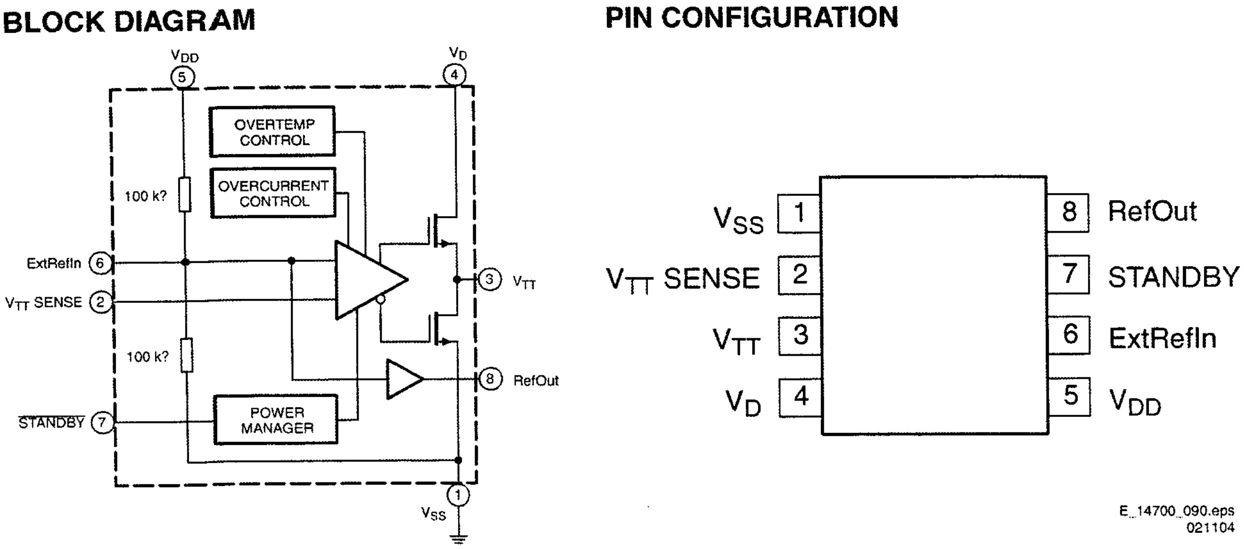
PIN CONFIGURATION


ENA
FLAG A
FLAG B
ENB
SO-8
OUT A
IN
GND
OUT B

E_14700_089.eps
021104

Figure 9-25 Internal block diagram and pin configuration

.11.7 Diagram B6B/B8, NE57814 (IC 7V03/7R01)


BLOCK DIAGRAM
VDD
5
VD
4
OVERTEMP CONTROL
OVERCURRENT CONTROL
100 k?
100 k?
ExtRefIn 6
VTT SENSE 2
3 VTT
8 RefOut
STANDBY 7
POWER MANAGER
1
VSS
PIN CONFIGURATION
VSS 1
VTT SENSE 2
VTT 3
VD 4
8 RefOut
7 STANDBY
6 ExtRefIn
5 VDD

E_14700_090.eps
021104

Figure 9-26 Internal block diagram and pin configuration

9.11.8 Diagram B7B, CY2305 (IC 7N54)

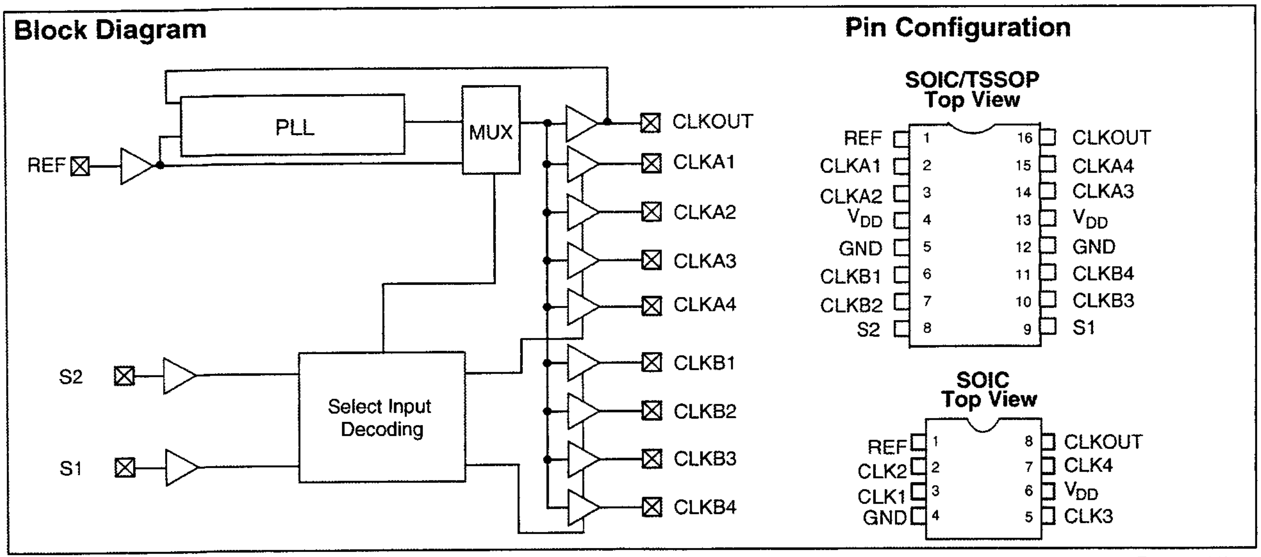

Block Diagram
PLL
MUX
REF
CLKOUT
CLKA1
CLKA2
CLKA3
CLKA4
CLKB1
CLKB2
CLKB3
CLKB4
S2
S1
Select Input Decoding
Pin Configuration
SOIC/TSSOP Top View
REF 1
CLKA1 2
CLKA2 3
VDD 4
GND 5
CLKB1 6
CLKB2 7
S2 8
16 CLKOUT
15 CLKA4
14 CLKA3
13 VDD
12 GND
11 CLKB4
10 CLKB3
9 S1
SOIC Top View
REF 1
CLK2 2
CLK1 3
GND 4
8 CLKOUT
7 CLK4
6 VDD
5 CLK3

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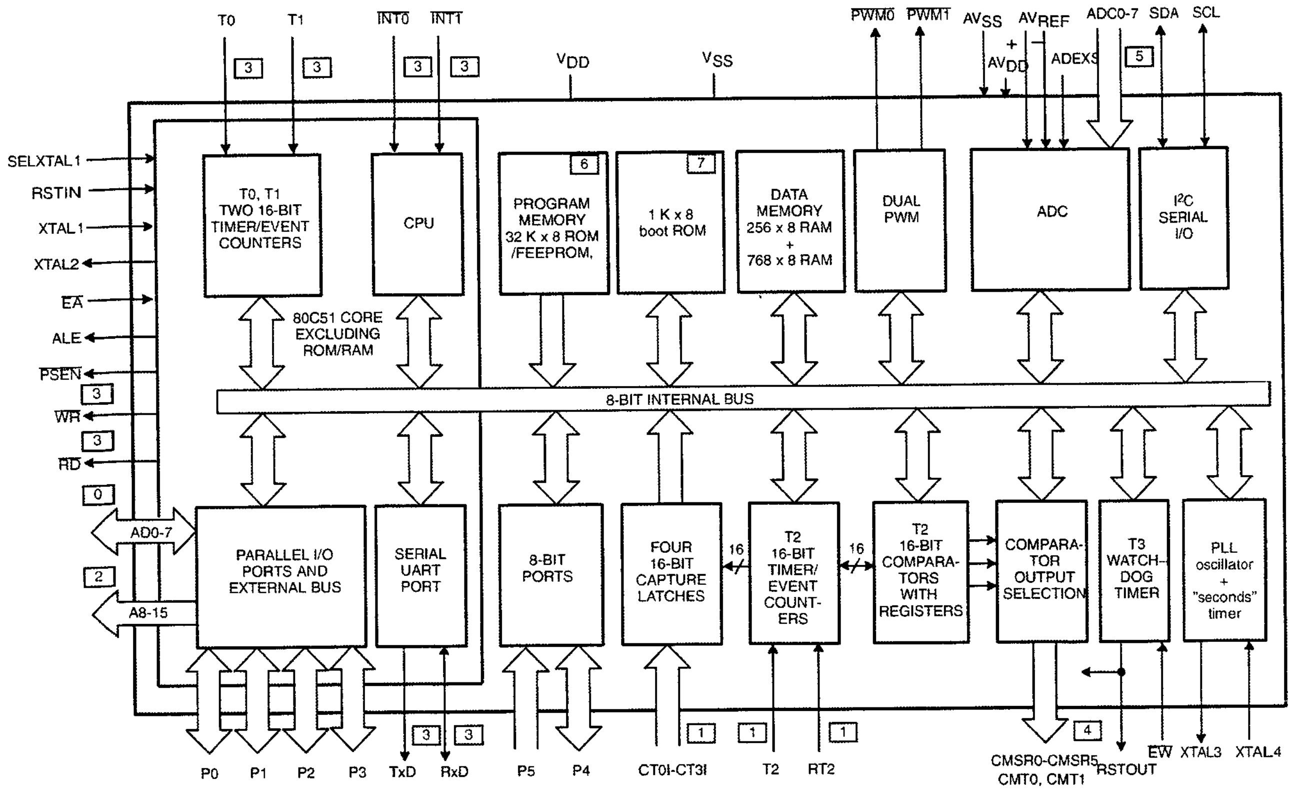
Figure 9-27 Internal block diagram and pin configuration

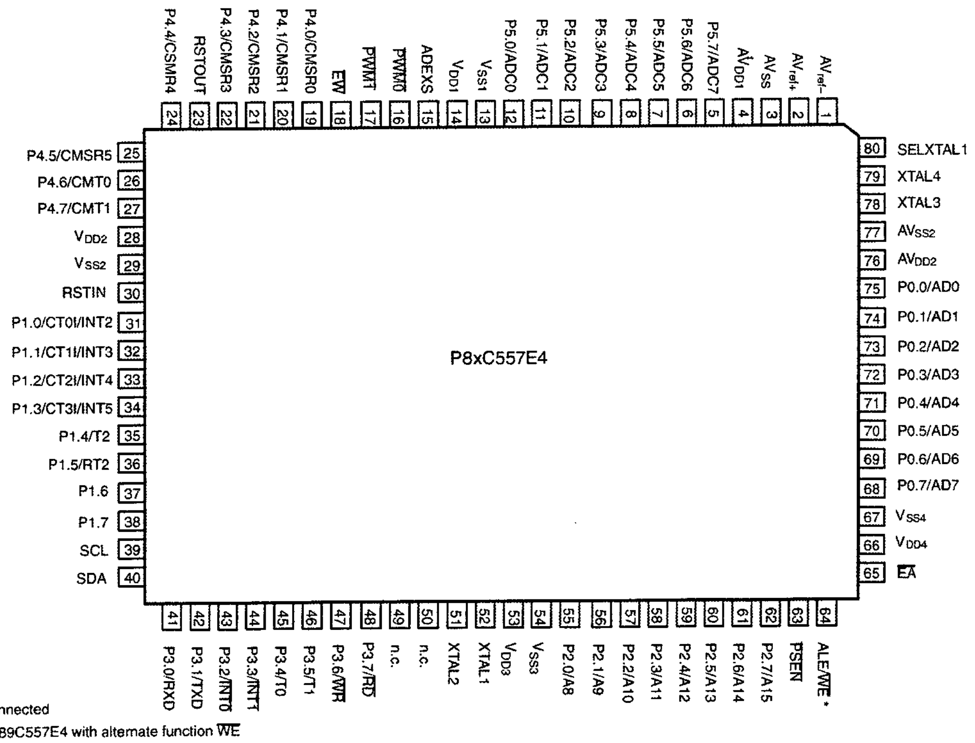
9.11.9 Diagram B7A, P89C557E4 (IC 7F15)

BLOCK DIAGRAM


T0
T1
INT0
INT1
3
VDD
VSS
PWM0
PWM1
AVSS
AVREF
+
AVDD
ADEXS
ADC0-7
5
SDA
SCL
SELXTAL1
RSTIN
XTAL1
XTAL2
EA
ALE
PSEN
WR
RD
0
2
T0, T1 TWO 16-BIT TIMER/EVENT COUNTERS
CPU
80C51 CORE EXCLUDING ROM/RAM
6
PROGRAM MEMORY 32 K x 8 ROM /FEEPROM,
7
1 K x 8 boot ROM
DATA MEMORY 256 x 8 RAM + 768 x 8 RAM
DUAL PWM
ADC
I²C SERIAL I/O
8-BIT INTERNAL BUS
AD0-7
A8-15
PARALLEL I/O PORTS AND EXTERNAL BUS
SERIAL UART PORT
8-BIT PORTS
FOUR 16-BIT CAPTURE LATCHES
16
T2 16-BIT TIMER/ EVENT COUNT-ERS
T2 16-BIT COMPARA-TORS WITH REGISTERS
COMPARA-TOR OUTPUT SELECTION
T3 WATCH-DOG TIMER
PLL oscillator + "seconds" timer
1
4
P0
P1
P2
P3
TxD
RxD
P5
P4
CT0I-CT3I
T2
RT2
CMSR0-CMSR5, CMT0, CMT1
RSTOUT
EW
XTAL3
XTAL4

0	ALTERNATE FUNCTION OF PORT0
1	ALTERNATE FUNCTION OF PORT1
2	ALTERNATE FUNCTION OF PORT2
3	ALTERNATE FUNCTION OF PORT 3
4	ALTERNATE FUNCTION OF PORT 4
5	ALTERNATE FUNCTION OF PORT 5
6	NOT PRESENT IN P80C557E4
7	ONLY PRESENT IN P89C557E4

PIN CONFIGURATION


P8xC557E4
1 AVref-
2 AVref+
3 AVSS
4 AVDD1
5 P5.7/ADC7
6 P5.6/ADC6
7 P5.5/ADC5
8 P5.4/ADC4
9 P5.3/ADC3
10 P5.2/ADC2
11 P5.1/ADC1
12 P5.0/ADC0
13 VSS1
14 VDD1
15 ADEXS
16 PWM0
17 PWM1
18 EW
19 P4.0/CMSR0
20 P4.1/CMSR1
21 P4.2/CMSR2
22 P4.3/CMSR3
23 RSTOUT
24 P4.4/CSMR4
25 P4.5/CMSR5
26 P4.6/CMT0
27 P4.7/CMT1
28 VDD2
29 VSS2
30 RSTIN
31 P1.0/CT0I/INT2
32 P1.1/CT1I/INT3
33 P1.2/CT2I/INT4
34 P1.3/CT3I/INT5
35 P1.4/T2
36 P1.5/RT2
37 P1.6
38 P1.7
39 SCL
40 SDA
41 P3.0/RXD
42 P3.1/TXD
43 P3.2/INT0
44 P3.3/INT1
45 P3.4/T0
46 P3.5/T1
47 P3.6/WR
48 P3.7/RD
49 n.c.
50 n.c.
51 XTAL2
52 XTAL1
53 VDD3
54 VSS3
55 P2.0/A8
56 P2.1/A9
57 P2.2/A10
58 P2.3/A11
59 P2.4/A12
60 P2.5/A13
61 P2.6/A14
62 P2.7/A15
63 PSEN
64 ALE/WE*
65 EA
66 VDD4
67 VSS4
68 P0.7/AD7
69 P0.6/AD6
70 P0.5/AD5
71 P0.4/AD4
72 P0.3/AD3
73 P0.2/AD2
74 P0.1/AD1
75 P0.0/AD0
76 AVDD2
77 AVSS2
78 XTAL3
79 XTAL4
80 SELXTAL1

n.c. = not connected

* = only P89C557E4 with alternate function WE

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Figure 9-28 Internal block diagram and pin configuration

.11.10 Diagram B11E, SiI9993 (IC 7E33)

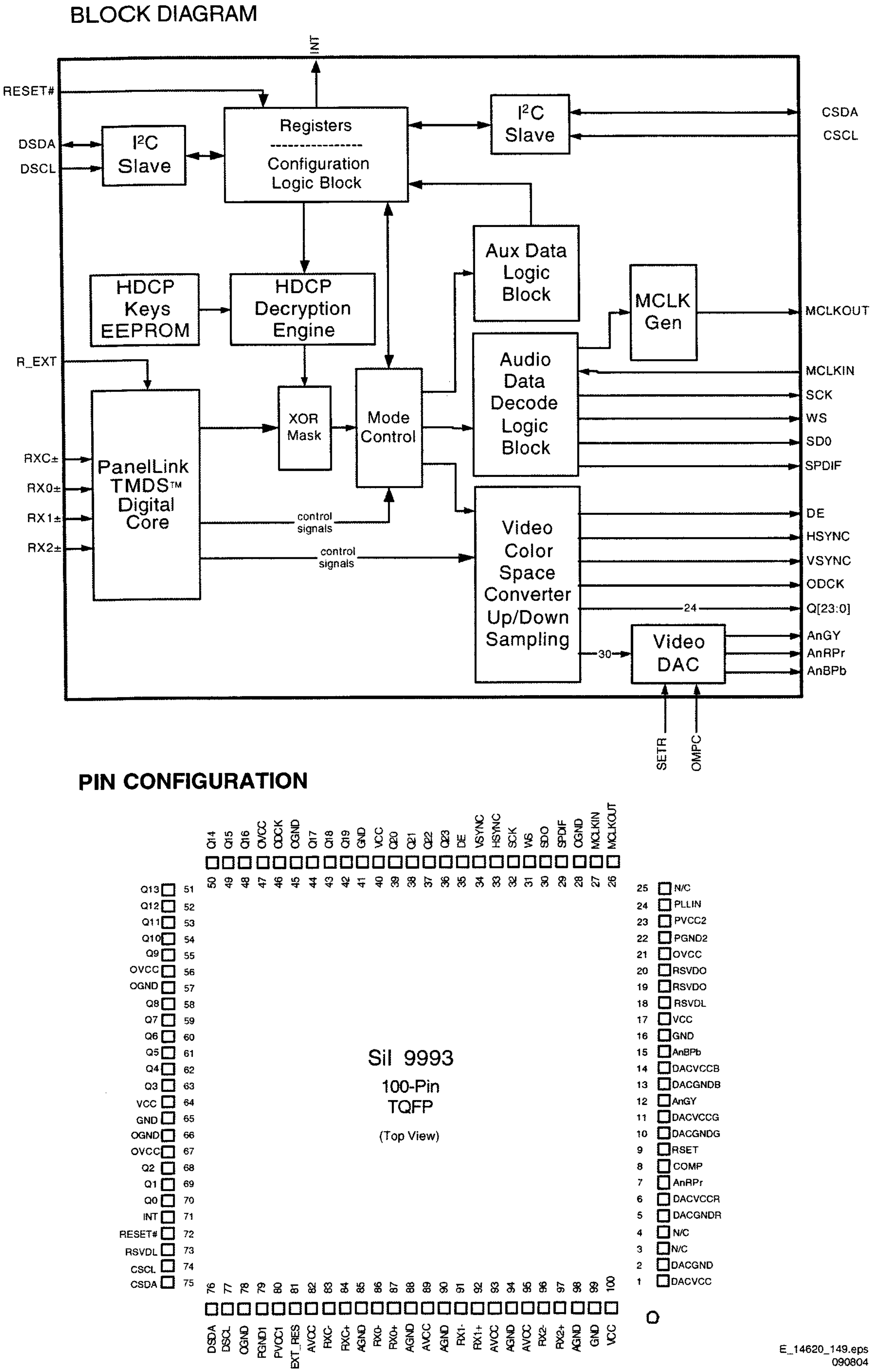
BLOCK DIAGRAM
INT
RESET#
DSDA
DSCL
I²C Slave
Registers
Configuration Logic Block
I²C Slave
CSDA
CSCL
Aux Data Logic Block
HDCP Keys EEPROM
HDCP Decryption Engine
MCLK Gen
MCLKOUT
R_EXT
MCLKIN
SCK
WS
SD0
SPDIF
XOR Mask
Mode Control
Audio Data Decode Logic Block
RXC±
RX0±
RX1±
RX2±
PanelLink TMDS™ Digital Core
control signals
control signals
Video Color Space Converter Up/Down Sampling
DE
HSYNC
VSYNC
ODCK
24
Q[23:0]
30
Video DAC
AnGY
AnRPr
AnBPb
SETR
OMPC
PIN CONFIGURATION
50 Q14, 49 Q15, 48 Q16, 47 OVCC, 46 ODCK, 45 OGND, 44 Q17, 43 Q18, 42 Q19, 41 GND, 40 VCC, 39 Q20, 38 Q21, 37 Q22, 36 Q23, 35 DE, 34 VSYNC, 33 HSYNC, 32 SCK, 31 WS, 30 SDO, 29 SPDIF, 28 OGND, 27 MCLKIN, 26 MCLKOUT
Q13 51, Q12 52, Q11 53, Q10 54, Q9 55, OVCC 56, OGND 57, Q8 58, Q7 59, Q6 60, Q5 61, Q4 62, Q3 63, VCC 64, GND 65, OGND 66, OVCC 67, Q2 68, Q1 69, Q0 70, INT 71, RESET# 72, RSVDL 73, CSCL 74, CSDA 75
25 N/C, 24 PLLIN, 23 PVCC2, 22 PGND2, 21 OVCC, 20 RSVDO, 19 RSVDO, 18 RSVDL, 17 VCC, 16 GND, 15 AnBPb, 14 DACVCCB, 13 DACGNDB, 12 AnGY, 11 DACVCCG, 10 DACGNDG, 9 RSET, 8 COMP, 7 AnRPr, 6 DACVCCR, 5 DACGNDR, 4 N/C, 3 N/C, 2 DACGND, 1 DACVCC
76 DSDA, 77 DSCL, 78 OGND, 79 PGND1, 80 PVCC1, 81 EXT_RES, 82 AVCC, 83 RXC-, 84 RXC+, 85 AGND, 86 RX0-, 87 RX0+, 88 AGND, 89 AVCC, 90 AGND, 91 RX1-, 92 RX1+, 93 AVCC, 94 AGND, 95 AVCC, 96 RX2-, 97 RX2+, 98 AGND, 99 GND, 100 VCC
SiI 9993
100-Pin TQFP
(Top View)
E_14620_149.eps
090804

Figure 9-29 Internal Block Diagram and Pin Layout

9.11.11 Diagram J, P87LPC760 (IC 7075)

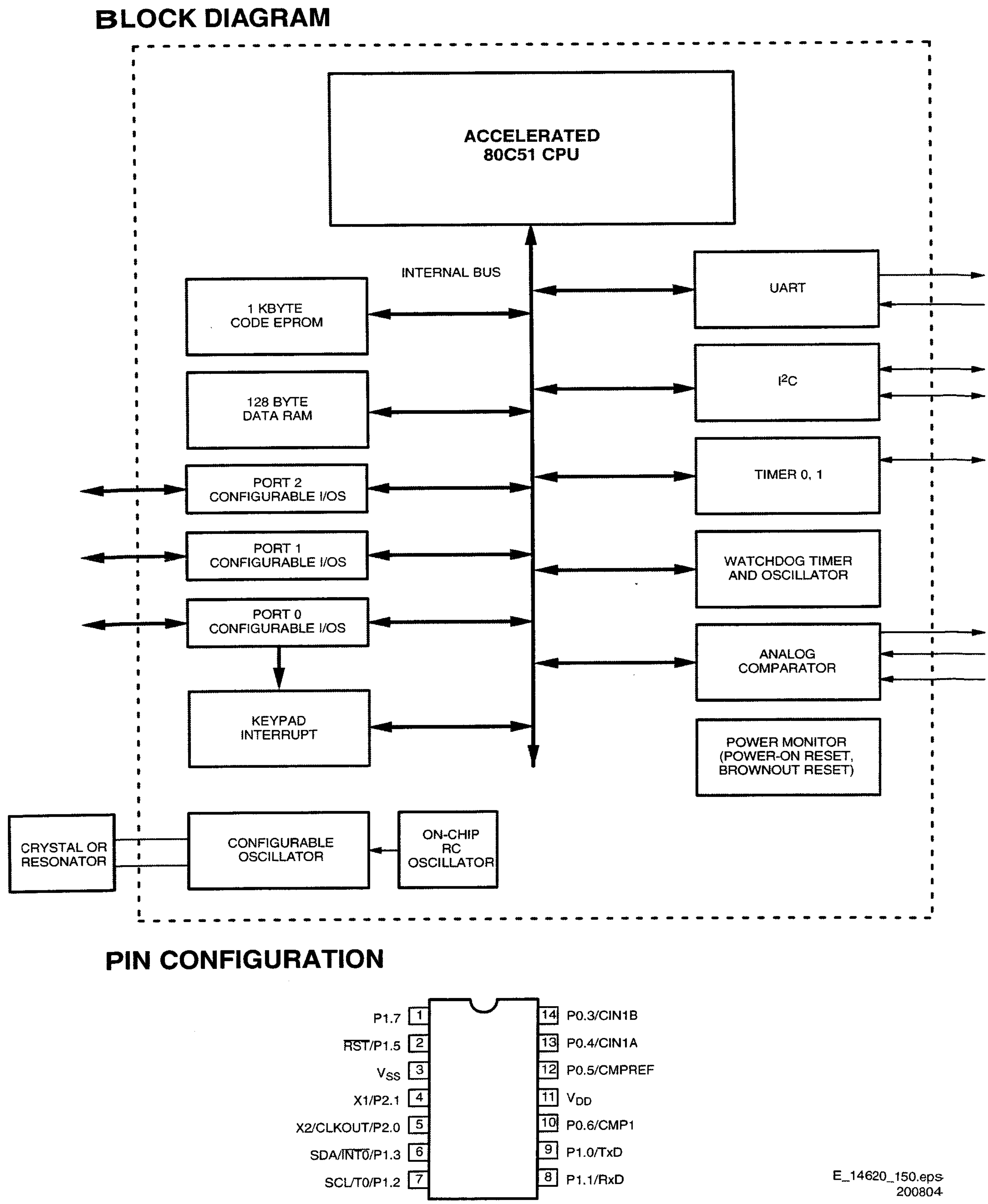
BLOCK DIAGRAM
ACCELERATED 80C51 CPU
INTERNAL BUS
1 KBYTE CODE EPROM
128 BYTE DATA RAM
PORT 2 CONFIGURABLE I/OS
PORT 1 CONFIGURABLE I/OS
PORT 0 CONFIGURABLE I/OS
KEYPAD INTERRUPT
UART
I²C
TIMER 0, 1
WATCHDOG TIMER AND OSCILLATOR
ANALOG COMPARATOR
POWER MONITOR (POWER-ON RESET, BROWNOUT RESET)
CRYSTAL OR RESONATOR
CONFIGURABLE OSCILLATOR
ON-CHIP RC OSCILLATOR
PIN CONFIGURATION
P1.7 1
RST/P1.5 2
VSS 3
X1/P2.1 4
X2/CLKOUT/P2.0 5
SDA/INT0/P1.3 6
SCL/T0/P1.2 7
14 P0.3/CIN1B
13 P0.4/CIN1A
12 P0.5/CMPREF
11 VDD
10 P0.6/CMP1
9 P1.0/TxD
8 P1.1/RxD
E_14620_150.eps
200804

Figure 9-30 Internal Block Diagram and Pin Layout

10. Spare Parts List

Set Level

Various

1004	9322 209 35682	LCD LQ315T3LZ13
1100	3104 308 78811	Media card reader
8302	3104 311 04721	Cable 7P/680/7P
8304	3104 311 08281	Cable 4P/480/4P
8305	3104 311 05351	Cable 3p/400/3p
8306	3104 311 08361	Cable 2P3/400/2P3
8307	3104 311 08381	Cable 4P/400/4P
8309	3104 311 08311	Cable 3P/480/4P
8314	3104 311 08531	Cable 10P/820/10P
8315	3104 311 08531	Cable 10P/820/10P
8318	3104 311 06841	Cable 6P/820/6P
8335	2422 076 00596	Cable USB-A 4p
8350	3104 311 08901	Cable 31P/230/30P

MF Supply 32" [A]

Various

0040	4822 492 62076	Transistor clamp
1007▲	4822 071 55002	Fuse T5A 250V
1304	2422 025 10648	Connector 8p m
1305	4822 267 10735	Connector 3p
1306	2422 025 16374	Connector 2p m
1307	2422 025 10647	Connector 4p m
1308	4822 265 20723	Connector 2p
1309	2422 025 04475	Connector 4p m
1309	2422 025 11143	Connector 3p m
1400▲	4822 253 50145	Fuse 3.15A T
1401▲	4822 252 11224	Fuse 1A T 250V
1402▲	4822 252 60151	Surge protect
1410▲	4822 265 11253	Fuse holder
1411▲	4822 265 11253	Fuse holder
1450▲	2422 132 07411	Relay 1p 5V 5A G5PA-1
1M02	2422 025 11244	Connector 7p m

—||—

2000▲	2252 811 95022	1.5nF 20% 250V
2002	4822 124 11767	470µF 20% 25V
2003	4822 124 80061	1000µF 20% 25V
2007▲	4822 126 14583	470nF 10% 16V 0805
2008	4822 126 14583	470nF 10% 16V 0805
2009	2238 867 18101	100pF 1% 50V 0603
2010	4822 124 40207	100µF 20% 25V
2011	2022 333 00119	10nF 5% 1.6kV
2012	4822 126 13862	1.5nF 10% 2kV
2013	4822 126 13862	1.5nF 10% 2kV
2014▲	2252 811 95018	2.2nF 20% 250V
2014▲	4822 126 13451	2.2nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	2238 586 59812	100nF 20% 50V 0603
2017	2022 333 00119	10nF 5% 1.6kV
2019	5322 126 11583	10nF 10% 50V 0603
2020	2020 021 00012	2200µF 20% 16V
2020	4822 124 12417	2200µF 20% 25V
2021	2020 021 00012	2200µF 20% 16V
2021	4822 124 12417	2200µF 20% 25V
2022	2020 021 00012	2200µF 20% 16V
2022	4822 124 11583	2200µF 20% 35V
2023	4822 126 14583	470nF 10% 16V 0805
2024	2020 552 96326	220nF 10% 16V
2025	2020 552 96683	220nF 10% 50V
2026	4822 126 14238	2.2nF 50V 0603
2028	5322 126 11578	1nF 10% 50V 0603
2029	5322 126 11578	1nF 10% 50V 0603
2033	2020 552 96683	220nF 10% 50V
2034	2238 867 18101	100pF 1% 50V 0603
2035	2238 867 18101	100pF 1% 50V 0603
2036	4822 126 14583	470nF 10% 16V 0805
2037	4822 126 14583	470nF 10% 16V 0805
2038	2020 021 00012	2200µF 20% 16V
2038	4822 124 11583	2200µF 20% 35V
2039	4822 126 14583	470nF 10% 16V 0805
2039	5322 126 11583	10nF 10% 50V 0603
2040	4822 126 14249	560pF 10% 50V 0603
2041	2020 552 96683	220nF 10% 50V
2042	2020 552 96683	220nF 10% 50V
2043	2020 552 96683	220nF 10% 50V
2044	5322 126 11578	1nF 10% 50V 0603
2045	5322 126 11578	1nF 10% 50V 0603
2046	3198 017 34730	47nF 16V 0603
2047	5322 126 11583	10nF 10% 50V 0603
2048	5322 126 11578	1nF 10% 50V 0603
2050	5322 126 11578	1nF 10% 50V 0603
2051	2020 552 96683	220nF 10% 50V
2052	2020 552 96683	220nF 10% 50V
2053	2020 552 96683	220nF 10% 50V
2060	4822 126 14238	2.2nF 50V 0603
2061	4822 126 14238	2.2nF 50V 0603
2062	4822 126 14238	2.2nF 50V 0603
2063	4822 126 13881	470pF 5% 50V
2064	4822 126 13881	470pF 5% 50V
2065	4822 126 14238	2.2nF 50V 0603
2071	5322 126 11578	1nF 10% 50V 0603
2072	5322 126 11578	1nF 10% 50V 0603
2077	4822 126 14238	2.2nF 50V 0603
2290	5322 126 11583	10nF 10% 50V 0603
2291	4822 126 13881	470pF 5% 50V
2292	2020 021 91354	1000µF 20% 50V
2292	4822 124 12417	2200µF 20% 25V
2293	4822 126 13881	470pF 5% 50V
2294	2020 021 91354	1000µF 20% 50V
2294	4822 124 12417	2200µF 20% 25V
2400▲	2222 338 22474	470nF 20% 275V
2401▲	2222 338 22474	470nF 20% 275V
2407▲	2252 811 95065	220pF 10% 250V
2503	2020 024 90718	10µF 20% 450V
2803	2222 365 55563	56nF 10% 400V
2804	2222 365 55563	56nF 10% 400V
2816	2020 024 90749	330µF 20% 400V

—WW—

3000▲	4822 052 10478	4.7Ω 5% 0.33W
3001	4822 051 30101	100Ω 5% 0.062W
3002	4822 051 30103	10kΩ 5% 0.062W
3002	4822 051 30393	39kΩ 5% 0.062W
3003	4822 117 13632	100kΩ 1% 0603 0.62W
3004	4822 051 30273	27kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30103	10kΩ 5% 0.062W
3008	4822 051 30331	330Ω 5% 0.062W
3009	4822 051 30332	3.3Ω 5% 0.062W
3010	4822 051 30471	47Ω 5% 0.062W
3011	4822 051 30471	47Ω 5% 0.062W
3012	4822 051 30153	15kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014▲	4822 052 10101	100Ω 5% 0.33W
3015▲	4822 052 10479	47Ω 5% 0.33W
3016	4822 051 30222	2.2kΩ 5% 0.062W
3016	4822 051 30332	3.3Ω 5% 0.062W
3017▲	4822 052 10101	100Ω 5% 0.33W
3018	4822 052 10479	47Ω 5% 0.33W
3019	4822 051 30222	2.2kΩ 5% 0.062W
3019	4822 051 30332	3.3Ω 5% 0.062W
3020	4822 051 30222	2.2kΩ 5% 0.062W
3020	4822 051 30332	3.3Ω 5% 0.062W
3021	4822 117 12139	22Ω 5% 0.062W
3021	4822 117 12971	15Ω 5% 0603 0.62W
3022	4822 051 30681	680Ω 5% 0.062W
3023	4822 051 30153	15kΩ 5% 0.062W
3025	4822 117 12903	1.8kΩ 1% 0.063W 0603
3026	4822 101 11383	Potm. 470Ω 30% linear
3027	4822 117 13632	100kΩ 1% 0603 0.62W
3028	4822 051 30332	3.3Ω 5% 0.062W
3029	4822 051 30222	2.2kΩ 5% 0.062W
3029	4822 051 30332	3.3Ω 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	4822 051 30103	10kΩ 5% 0.062W
3032	4822 051 30103	10kΩ 5% 0.062W
3033	4822 052 11108	1Ω 5% 0.5W
3034	4822 051 30102	1kΩ 5% 0.062W
3035	4822 051 30332	3.3Ω 5% 0.062W
3036	4822 117 13632	100kΩ 1% 0603 0.62W
3039	4822 051 30102	1kΩ 5% 0.062W
3040	5322 117 13056	8.2kΩ 1% 0.063W 0603
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30123	12kΩ 5% 0.1W
3043	4822 051 30109	10Ω 5% 0.062W
3044	4822 051 30471	47Ω 5% 0.062W
3045	4822 117 12139	22Ω 5% 0.062W
3045	4822 117 12971	15Ω 5% 0603 0.62W
3046	4822 117 12139	22Ω 5% 0.062W
3046	4822 117 12971	15Ω 5% 0603 0.62W
3047	4822 051 30479	47Ω 5% 0.062W
3048	4822 051 30272	2.7kΩ 5% 0.062W
3049	4822 051 30333	33kΩ 5% 0.062W
3050	4822 050 28204	820kΩ 1% 0.6W
3051	4822 051 30472	4.7Ω 5% 0.062W
3052	2322 704 67502	7.5kΩ 1% 0.5W
3053	4822 050 26804	680kΩ 1% 0.6W
3054	4822 051 30472	4.7Ω 5% 0.062W
3055	4822 051 30221	220Ω 5% 0.062W
3056	4822 051 30221	220Ω 5% 0.062W
3057	4822 051 30221	220Ω 5% 0.062W
3058	4822 053 20565	5.6MΩ 5% 0.25W
3059	4822 051 30222	2.2kΩ 5% 0.062W
3061	4822 051 30683	68kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 117 13632	100kΩ 1% 0603 0.62W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30101	100Ω 5% 0.062W
3068	4822 051 30222	2.2kΩ 5% 0.062W
3070	4822 051 30102	1kΩ 5% 0.062W
3071	4822 051 30103	10kΩ 5% 0.062W
3075	4822 051 30102	1kΩ 5% 0.062W
3100	4822 051 30109	10Ω 5% 0.062W
3292	4822 051 30561	560Ω 5% 0.062W
3400▲	2122 550 00158	VDR 1mA 612V
3401▲	4822 053 21475	4.7MΩ 5% 0.5W
3402▲	4822 053 21475	4.7MΩ 5% 0.5W
3403▲	4822 053 21475	4.7MΩ 5% 0.5W
3404	4822 116 83872	220Ω 5% 0.5W
3810	2322 257 41123	12kΩ 5% 5W
3999	4822 051 30102	1kΩ 5% 0.062W
9002	4822 051 30008	Jumper 0603
9009	4822 051 30008	Jumper 0603
9030	4822 051 30008	Jumper 0603
9047	4822 051 30008	Jumper 0603
9085	4822 051 30008	Jumper 0603

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5001	2422 531 02444	Transformer S13932-04Y
5002▲	8204 000 77321	Transformer 2652.0002
5004	4822 526 10704	Bead 50 Ω at 100MHz
5005	4822 157 11411	Bead 80Ω at 100MHz
5005	4822 526 10704	Bead 50 Ω at 100MHz
5007	4822 157 11411	Bead 80Ω at 100MHz
5007	4822 526 10704	Bead 50 Ω at 100MHz
5008	4822 157 11411	Bead 80Ω at 100MHz
5008	4822 526 10704	Bead 50 Ω at 100MHz
5009	4822 157 11411	Bead 80Ω at 100MHz
5010	4822 157 11411	Bead 80Ω at 100MHz
5013	4822 157 11411	Bead 80Ω at 100MHz
5013	4822 526 10704	Bead 50 Ω at 100MHz
5015	4822 157 11411	Bead 80Ω at 100MHz
5016	4822 157 11411	Bead 80Ω at 100MHz
5017	4822 526 10704	Bead 50 Ω at 100MHz
5026	4822 526 10704	Bead 50 Ω at 100MHz
5028	4822 526 10704	Bead 50 Ω at 100MHz
5029	4822 526 10704	Bead 50 Ω at 100MHz
5030	4822 526 10704	Bead 50 Ω at 100MHz
5031	4822 526 10704	Bead 50 Ω at 100MHz
5032	4822 526 10704	Bead 50 Ω at 100MHz
5033	4822 526 10704	Bead 50 Ω at 100MHz
5034	4822 526 10704	Bead 50 Ω at 100MHz
5040	4822 157 11411	Bead 80Ω at 100MHz
5041	4822 526 10704	Bead 50 Ω at 100MHz
5291	2422 536 00776	33µH 10%
5292	2422 536 00776	33µH 10%
5293	2422 536 00776	33µH 10%
5401▲	2422 549 43291	Filter 47mH 2A
5403	3104 308 21101	Coil DTH40203H65
5403	3104 308 21191	Coil DTH40323H65

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6002	4822 130 11397	BAS316
6003	4822 130 11397	BAS316
6004	4822 130 11397	BAS316
6004	4822 130 80622	BAT54
6005	4822 130 11397	BAS316
6005	4822 130 80622	BAT54
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6009	4822 130 11152	UDZ18B
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	9322 197 30685	SML4744
6013	9322 197 30685	SML4744
6017	4822 130 11397	BAS316
6020	4822 130 11397	BAS316
6021	9322 207 11687	STPS20L45CT
6022	4822 130 11148	UDZ4.7B
6023	4822 130 11397	BAS316
6025	9322 207 11687	STPS20L45CT

6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6030	4822 130 11397	BAS316
6044	9322 207 11687	STPS20L45CT
6045	9322 207 11687	STPS20L45CT
6051	4822 130 11397	BAS316
6054	4822 130 11551	UDZS10B
6077	9322 202 55685	BYG22D
6078	9322 202 55685	BYG22D
6079	9322 202 55685	BYG22D
6080	9322 202 55685	BYG22D
6081	9340 548 67115	PDZ22B
6291	4822 130 11572	STPS8H100F
6293	4822 130 11572	STPS8H100F
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6506	4822 130 83147	DF06M
6807	9322 199 74682	GBJ6J-B15

7001	9322 108 21682	MC34067P
7002▲	9322 149 04682	TCET1102
7004	3198 010 42310	BC847BW
7005	9322 192 18687	STP15NK50ZFP
7005	9322 205 26687	FQPF18N50V2
7006	9322 192 18687	STP15NK50ZFP
7006	9322 205 26687	FQPF18N50V2
7007	3198 010 42320	BC857BW
7008	3198 010 42320	BC857BW
7009	3198 010 42320	BC857BW
7010	4822 209 16406	TL431ACD
7010	9322 125 09668	TL431AID
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW
7030	3198 010 42310	BC847BW
7031	3198 010 42310	BC847BW

Small Signal Board [B]

Various

0601	3104 317 07391	SW Stby (see Prod.Surv.)
0603	3104 317 06633	SW DDC(see Prod.Surv.)
0605	3104 317 08171	SW Main(see Prod.Surv.)
1C33▲	2422 086 11092	Fuse 500mA 50V F SMD
1C51	2422 549 44369	SAW 38.9MHz K9656L
1C52	2422 549 44372	SAW 38.9MHz K3953L
1D01▲	2422 086 00623	Fuse 3A T 125V
1E00	2422 025 18133	Socket SCART
1E10	2422 549 00146	Line filter 20V 3A
1E11	2422 549 00146	Line filter 20V 3A
1E12	2422 549 00146	Line filter 20V 3A
1E13	2422 549 00146	Line filter 20V 3A
1E35▲	2422 025 17601	Connector 40p f
1E65	2422 033 00018	Connector 19p F
1F01	2422 543 01443	Xtal 16MHz 20pF
1G50	2422 025 18427	Connector 31p f
1G51	2422 549 45325	Bead 67Ω at 100MHz
1G52	2422 549 45325	Bead 67Ω at 100MHz
1G53	2422 549 45325	Bead 67Ω at 100MHz
1G54	2422 549 45325	Bead 67Ω at 100MHz
1G55	2422 549 45325	Bead 67Ω at 100MHz
1H00	2422 543 01397	Xtal 27MHz 18pF
1H01▲	2422 025 17775	Socket USB 4p f
1I00	2422 026 05622	Socket 2p f
1I05	2422 026 05393	Socket 2p f
1I07	2422 026 05527	Socket Cinch 2p f
1I10	2422 026 05393	Socket 2p f
1M01	2422 025 10768	Connector 3p m
1M15	4822 267 10459	Connector 3p
1M17	2422 025 17765	Connector 7p m
1M20	2422 025 10772	Connector 12p m
1M52	2422 025 10769	Connector 9p m
1T03	8204 000 77501	Tuner UV1318S
1U02▲	2422 086 00623	Fuse 3A T 125V
8301	3104 311 00351	Cable 3p/400/3p
8303	3104 311 07971	Cable 10P/280/10P
8308	3104 311 06951	Cable 2P3/180/2P
8317	3104 311 07871	Cable 7P/180/7P
8320	3104 311 08181	Cable 12P/400/12P
8335	3104 311 08801	Flex foil 40p/140/40p
8336	3104 311 08161	Cable 11P/480/11P
8346	3104 311 06991	Cable 11P/280/11P
8352	3104 311 07381	Cable 9P/220/9P

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2C01	2238 787 15641	22nF 5% 16V 0402
2C03	2238 787 15641	22nF 5% 16V 0402
2C04	2238 787 15641	22nF 5% 16V 0402
2C05	2238 787 15641	22nF 5% 16V 0402
2C06	2238 787 15641	22nF 5% 16V 0402
2C07	2238 787 15641	22nF 5% 16V 0402
2C08	2238 787 15641	22nF 5% 16V 0402
2C09	2238 787 15641	22nF 5% 16V 0402
2C10	2238 869 15221	220pF 1% 50V 0402
2C12	2238 787 15641	22nF 5% 16V 0402
2C13	2238 787 15641	22nF 5% 16V 0402
2C15	2238 787 15641	22nF 5% 16V 0402
2C16	2238 787 15641	22nF 5% 16V 0402
2C17	2238 787 15641	22nF 5% 16V 0402
2C18	2238 787 15641	22nF 5% 16V 0402
2C19	2238 787 15641	22nF 5% 16V 0402
2C20	2238 787 15641	22nF 5% 16V 0402
2C21	4822 124 23002	10µF 16V
2C22	2238 787 15641	22nF 5% 16V 0402
2C23	2238 787 15641	22nF 5% 16V 0402
2C24	2022 552 05679	1µF 10% 16V 0805
2C25	2020 004 90283	10µF 20% 10V 1206
2C27	2238 586 59812	100nF 20% 50V 0603
2C28	2238 586 59812	100nF 20% 50V 0603
2C31	2238 586 59812	100nF 20% 50V 0603
2C32	4822 124 23002	10µF 16V
2C33	2238 586 59812	100nF 20% 50V 0603
2C34	4822 124 23002	10µF 16V
2C35	2238 586 59812	100nF 20% 50V 0603
2C36	2022 552 05679	1µF 10% 16V 0805
2C37	2020 552 96618	1nF 10% 50V 0402
2C38	2022 552 05679	1µF 10% 16V 0805
2C39	2238 586 59812	100nF 20% 50V 0603
2C40	2238 586 59812	100nF 20% 50V 0603
2C41	2238 787 15641	22nF 5% 16V 0402
2C44	2238 586 59812	100nF 20% 50V 0603
2C45	2022 552 05679	1µF 10% 16V 0805
2C52	4822 124 23002	10µF 16V
2C53	2020 552 96628	10nF 10% 16V 0402
2C56	2022 552 05679	1µF 10% 16V 0805
2C57	2020 552 96628	10nF 10% 16V 0402
2C59	3198 032 55130	10µF 20% 20V
2C60	2020 552 96628	10nF 10% 16V 0402
2C63	2238 586 59812	100nF 20% 50V 0603
2C65	2020 552 96628	10nF 10% 16V 0402
2C66	3198 032 55130	10µF 20% 20V
2C67	2022 552 05679	1µF 10% 16V 0805
2C68	2022 552 05679	1µF 10% 16V 0805
2C69	2238 586 59812	100nF 20% 50V 0603
2C70	2020 552 96628	10nF 10% 16V 0402
2C72	2020 552 96618	1nF 10% 50V 0402
2C73	2020 552 96628	10nF 10% 16V 0402
2C74	2020 552 96628	10nF 10% 16V 0402
2C78	2022 552 05679	1µF 10% 16V 0805
2C79	2022 552 05679	1µF 10% 16V 0805
2C81	2022 029 00632	330µF 20% 6.3V
2C82	3198 032 55130	10µF 20% 20V
2D10	5322 124 41945	22µF 20% 35V
2D11	2020 552 96628	10nF 10% 16V 0402
2D12	2020 552 96623	2.2nF 10% 50V 0402
2D13	2022 552 05679	1µF 10% 16V 0805
2D30	2238 586 59812	100nF 20% 50V 0603
2D31	2020 552 96618	1nF 10% 50V 0402
2D32	2238 586 59812	100nF 20% 50V 0603
2D33	2022 552 05635	22µF 10% 16V
2D34	2022 552 05635	22µF 10% 16V
2D35	2238 586 59812	100nF 20% 50V 0603
2D36	2022 552 05679	1µF 10% 16V 0805
2D37	2020 552 96618	1nF 10% 50V 0402
2D38	2020 552 96618	1nF 10% 50V 0402
2D39	2020 552 96618	1nF 10% 50V 0402
2D40	2238 586 59812	100nF 20% 50V 0603
2D41	2238 586 59812	100nF 20% 50V 0603
2D42	2238 787 15641	22nF 5% 16V 0402
2D43	2022 552 05635	22µF 10% 16V
2D44	2020 552 96628	10nF 10% 16V 0402
2D45	2020 552 96628	10nF 10% 16V 0402
2D46	3198 035 04710	470pF 50V 0402
2D47	2238 586 59812	100nF 20% 50V 0603
2D48	5322 124 41945	22µF 20% 35V
2D49	2020 552 96628	10nF 10% 16V 0402
2E00	2238 869 15101	100pF 5% 50V 0402
2E01	2238 869 15101	100pF 5% 50V 0402
2E02	2238 869 15101	100pF 5% 50V 0402
2E03	2238 869 15101	100pF 5% 50V 0402
2E04	2238 869 15101	100pF 5% 50V 0402
2E05	2238 869 15101	100pF 5% 50V 0402
2E06	2238 869 15101	100pF 5% 50V 0402
2E13	2238 586 59812	100nF 20% 50V 0603
2E14	2238 586 59812	100nF 20% 50V 0603
2E15	2238 586 59812	100nF 20% 50V 0603
2E16	2238 586 59812	100nF 20% 50V 0603
2E17	4822 124 11946	22µF 20% 16V
2E18	2238 586 59812	100nF 20% 50V 0603
2E19	2238 586 59812	100nF 20% 50V 0603
2E20	2238 586 59812	100nF 20% 50V 0603
2E21	2238 586 59812	100nF 20% 50V 0603
2E22	2020 552 96618	1nF 10% 50V 0402
2E23	2020 552 96618	1nF 10% 50V 0402
2E24	3198 035 71040	100nF 10% 16V 0402
2E25	2238 869 15101	100pF 5% 50V 0402
2E26	3198 017 34730	47nF 16V 0603
2E27	2238 869 15101	100pF 5% 50V 0402
2E28	2238 869 15101	100pF 5% 50V 0402
2E29	2020 552 96628	10nF 10% 16V 0402
2E30	2238 869 15101	100pF 5% 50V 0402
2E31	5322 124 41945	22µF 20% 35V
2E32	2020 552 96637	10µF 10% 6.3V 0805
2E34	3198 035 04710	470pF 50V 0402
2E35	4822 124 11946	22µF 20% 16V
2E36	4822 051 30008	Jumper 0603
2E37	2022 552 05679	1µF 10% 16V 0805
2E38	2022 552 05679	1µF 10% 16V 0805
2E39	2022 552 05679	1µF 10% 16V 0805
2E40	2238 869 15101	100pF 5% 50V 0402
2E41	2238 869 15101	100pF 5% 50V 0402
2E42	2020 012 00001	220µF 20% 16V
2E43	4822 124 80151	47µF 16V
2E44	2020 012 00001	220µF 20% 16V
2E48	4822 124 80151	47µF 16V
2E54	2238 869 15101	100pF 5% 50V 0402
2E56	2238 869 15101	100pF 5% 50V 0402
2E58	2238 869 15101	100pF 5% 50V 0402
2E60	2238 869 15101	100pF 5% 50V 0402
2E62	2238 869 15101	100pF 5% 50V 0402
2E64	2238 869 15101	100pF 5% 50V 0402
2E72	2238 869 15101	100pF 5% 50V 0402
2E74	2238 869 15101	100pF 5% 50V 0402
2E76	2238 869 15101	100pF 5% 50V 0402
2E78	2238 869 15101	100pF 5% 50V 0402
2E80	2238 869 15101	100pF 5% 50V 0402
2E90	2238 869 15101	100pF 5% 50V 0402
2E92	2238 869 15101	100pF 5% 50V 0402
2E94	2238 869 15101	100pF 5% 50V 0402
2E98	2238 869 15101	100pF 5% 50V 0402
2E99	2238 869 15101	100pF 5% 50V 0402
2F00	2238 586 59812	100nF 20% 50V 0603
2F01	2238 586 59812	100nF 20% 50V 0603
2F02	2238 586 59812	100nF 20% 50V 0603
2F03	2238 586 59812	100nF 20% 50V 0603
2F04	2238 586 59812	100nF 20% 50V 0603
2F05	2238 586 59812	100nF 20% 50V 0603
2F06	4822 126 14519	22pF 5% 50V 0402
2F07	4822 126 14519	22pF 5% 50V 0402
2F11	2238 586 59812	100nF 20% 50V 0603
2F12	2238 586 59812	100nF 20% 50V 0603
2F13	2238 586 59812	100nF 20% 50V 0603
2F14	2238 586 59812	100nF 20% 50V 0603
2F15	2238 586 59812	100nF 20% 50V 0603
2F16	2238 586 59812	100nF 20% 50V 0603
2F17	2238 586 59812	100nF 20% 50V 0603
2F18	2238 586 59812	100nF 20% 50V 0603
2F20	2238 586 59812	100nF 20% 50V 0603
2F21	2238 586 59812	100nF 20% 50V 0603
2F23	2238 586 59812	100nF 20% 50V 0603
2F24	2238 586 59812	100nF 20% 50V 0603
2F25	4822 124 23002	10µF 16V
2G00	2238 586 59812	100nF 20% 50V 0603
2G21	2020 552 96618	1nF 10% 50V 0402
2G22	2238 586 59812	100nF 20% 50V 0603
2G23	2238 586 59812	100nF 20% 50V 0603
2G31	2238 586 59812	100nF 20% 50V 0603
2G50	2238 586 59812	100nF 20% 50V 0603
2G51	2238 586 59812	100nF 20% 50V 0603
2G52	2238 586 59812	100nF 20% 50V 0603
2G53	2020 552 96628	10nF 10% 16V 0402
2G54	2238 586 59812	100nF 20% 50V 0603
2G55	2022 552 05679	1µF 10% 16V 0805
2G57	2238 586 59812	100nF 20% 50V 0603
2G83	5322 124 41945	22µF 20% 35V
2G88	2020 552 96628	10nF 10% 16V 0402
2G89	5322 124 41945	22µF 20% 35V
2H01	2238 586 59812	100nF 20% 50V 0603
2H06	2020 552 96618	1nF 10% 50V 0402
2H07	2020 552 96618	1nF 10% 50V 0402
2H08	3198 034 02790	47pF 1% 50V 0402
2H09	3198 034 02790	47pF 1% 50V 0402
2H12	3198 034 02790	47pF 1% 50V 0402
2H15	2238 869 15101	100pF 5% 50V 0402
2H16	2020 552 96618	1nF 10% 50V 0402
2H17	2020 552 96618	1nF 10% 50V 0402
2I00	2238 869 15101	100pF 5% 50V 0402
2I02	4822 124 23002	10µF 16V
2I05	2238 869 15101	100pF 5% 50V 0402
2I06	2238 869 15101	100pF 5% 50V 0402
2I07	2238 869 15101	100pF 5% 50V 0402
2I08	2238 869 15101	100pF 5% 50V 0402
2I09	2238 869 15101	100pF 5% 50V 0402
2I12	2022 552 05679	1µF 10% 16V 0805
2I13	2022 552 05679	1µF 10% 16V 0805
2I14	2022 552 05679	1µF 10% 16V 0805

2I15	2020 552 96618	1nF 10% 50V 0402
2I16	2020 552 96618	1nF 10% 50V 0402
2I19	2238 586 59812	100nF 20% 50V 0603
2I20	2238 586 59812	100nF 20% 50V 0603
2I21	2238 586 59812	100nF 20% 50V 0603
2I22	4822 124 11946	22µF 20% 16V
2I23	2238 586 59812	100nF 20% 50V 0603
2I24	2020 552 96618	1nF 10% 50V 0402
2I31	2238 586 59812	100nF 20% 50V 0603
2I32	2238 586 59812	100nF 20% 50V 0603
2I33	2238 586 59812	100nF 20% 50V 0603
2I34	2238 586 59812	100nF 20% 50V 0603
2I37	2238 586 59812	100nF 20% 50V 0603
2I39	4822 051 30008	Jumper 0603
2I42	2020 552 96618	1nF 10% 50V 0402
2I43	2238 586 59812	100nF 20% 50V 0603
2I44	2020 004 90283	10µF 20% 10V 1206
2I45	2238 586 59812	100nF 20% 50V 0603
2I46	2020 552 96618	1nF 10% 50V 0402
2I47	2238 586 59812	100nF 20% 50V 0603
2I48	2020 004 90283	10µF 20% 10V 1206
2I49	2238 586 59812	100nF 20% 50V 0603
2I54	2238 586 59812	100nF 20% 50V 0603
2I58	2238 586 59812	100nF 20% 50V 0603
2I59	4822 124 12095	100µF 20% 16V
2I60	2020 004 90283	10µF 20% 10V 1206
2I61	2022 552 05679	1µF 10% 16V 0805
2I63	2022 552 05679	1µF 10% 16V 0805
2I70	2238 787 15641	22nF 5% 16V 0402
2I71	4822 124 23002	10µF 16V
2I73	4822 124 23002	10µF 16V
2I87	4822 124 23002	10µF 16V
2I89	4822 124 23002	10µF 16V
2I90	4822 124 12095	100µF 20% 16V
2I91	2238 787 15641	22nF 5% 16V 0402
2I92	2238 787 15641	22nF 5% 16V 0402
2I93	2022 552 05679	1µF 10% 16V 0805
2I94	2238 787 15641	22nF 5% 16V 0402
2I95	4822 124 23002	10µF 16V
2I98	2022 552 05679	1µF 10% 16V 0805
2J00	2238 586 59812	100nF 20% 50V 0603
2J02	3198 035 03320	3.3nF 5% 50V 0402
2J03	3198 035 03320	3.3nF 5% 50V 0402
2J08	4822 126 14324	33pF 5% 50V 0402
2J12	4822 126 14324	33pF 5% 50V 0402
2J13	4822 126 14324	33pF 5% 50V 0402
2J14	3198 035 03320	3.3nF 5% 50V 0402
2J18	4822 126 14324	33pF 5% 50V 0402
2J19	4822 126 14324	33pF 5% 50V 0402
2J20	2238 586 59812	100nF 20% 50V 0603
2J21	3198 032 28210	220µF 20% 6.3V
2J26	2238 586 59812	100nF 20% 50V 0603
2J36	3198 035 03320	3.3nF 5% 50V 0402
2J37	2238 586 59812	100nF 20% 50V 0603
2J38	2022 552 05679	1µF 10% 16V 0805
2J39	3198 035 03320	3.3nF 5% 50V 0402
2J41	3198 035 03320	3.3nF 5% 50V 0402
2J42	3198 035 03320	3.3nF 5% 50V 0402
2J43	3198 035 03320	3.3nF 5% 50V 0402
2J44	3198 035 03320	3.3nF 5% 50V 0402
2J45	3198 035 03320	3.3nF 5% 50V 0402
2J46	2022 552 05679	1µF 10% 16V 0805
2J51	2020 004 90283	10µF 20% 10V 1206
2J52	2238 787 15641	22nF 5% 16V 0402
2J53	2238 787 15641	22nF 5% 16V 0402
2J54	2238 787 15641	22nF 5% 16V 0402
2J59	2238 586 59812	100nF 20% 50V 0603
2J60	2238 586 59812	100nF 20% 50V 0603
2J61	2238 586 59812	100nF 20% 50V 0603
2J62	2238 586 59812	100nF 20% 50V 0603
2J63	2238 586 59812	100nF 20% 50V 0603
2J64	2238 586 59812	100nF 20% 50V 0603
2J65	2238 586 59812	100nF 20% 50V 0603
2J66	2238 586 59812	100nF 20% 50V 0603
2J67	2238 586 59812	100nF 20% 50V 0603
2J68	2238 586 59812	100nF 20% 50V 0603
2J69	2238 586 59812	100nF 20% 50V 0603
2J70	2238 586 59812	100nF 20% 50V 0603
2J71	2238 586 59812	100nF 20% 50V 0603
2J72	2238 586 59812	100nF 20% 50V 0603
2J73	2238 586 59812	100nF 20% 50V 0603
2J74	2238 586 59812	100nF 20% 50V 0603
2J75	2238 586 59812	100nF 20% 50V 0603
2J76	2238 586 59812	100nF 20% 50V 0603
2J77	2238 586 59812	100nF 20% 50V 0603
2J78	2020 004 90283	10µF 20% 10V 1206
2J79	2020 004 90283	10µF 20% 10V 1206
2J80	2238 586 59812	100nF 20% 50V 0603
2J81	2238 787 15641	22nF 5% 16V 0402
2J82	2020 004 90283	10µF 20% 10V 1206
2K00	4822 124 23002	10µF 16V
2K01	2238 787 15641	22nF 5% 16V 0402
2K02	2238 787 15641	22nF 5% 16V 0402
2K03	2238 787 15641	22nF 5% 16V 0402
2K04	2238 787 15641	22nF 5% 16V 0402
2K05	2238 787 15641	22nF 5% 16V 0402
2K06	2238 787 15641	22nF 5% 16V 0402
2K07	2238 787 15641	22nF 5% 16V 0402
2K08	2238 787 15641	22nF 5% 16V 0402
2K09	2238 787 15641	22nF 5% 16V 0402
2K10	2020 004 90283	10µF 20% 10V 1206
2K11	2020 004 90283	10µF 20% 10V 1206
2K12	2238 787 15641	22nF 5% 16V 0402
2K13	2020 004 90283	10µF 20% 10V 1206
2K14	2238 787 15641	22nF 5% 16V 0402
2K15	2238 787 15641	22nF 5% 16V 0402
2K16	2238 787 15641	22nF 5% 16V 0402
2K17	2238 787 15641	22nF 5% 16V 0402
2K18	2238 787 15641	22nF 5% 16V 0402
2K19	2238 787 15641	22nF 5% 16V 0402
2K20	2238 787 15641	22nF 5% 16V 0402
2K21	2238 787 15641	22nF 5% 16V 0402
2K22	2020 004 90283	10µF 20% 10V 1206
2K23	2020 004 90283	10µF 20% 10V 1206
2K24	2238 787 15641	22nF 5% 16V 0402
2K25	2238 869 15101	100pF 5% 50V 0402
2K26	4822 124 23002	10µF 16V
2K27	2238 787 15641	22nF 5% 16V 0402
2K28	4822 117 13548	1kΩ 5% 0402
2K33	2238 787 15641	22nF 5% 16V 0402
2K35	2022 552 05679	1µF 10% 16V 0805
2K36	2022 552 05679	1µF 10% 16V 0805
2K40	2238 586 59812	100nF 20% 50V 0603
2K41	2238 586 59812	100nF 20% 50V 0603
2K42	4822 124 80151	47µF 16V
2K43	2238 586 59812	100nF 20% 50V 0603
2K44	2238 586 59812	100nF 20% 50V 0603
2K45	2238 586 59812	100nF 20% 50V 0603
2K58	2022 552 05679	1µF 10% 16V 0805
2K60	2022 552 05679	1µF 10% 16V 0805
2K61	2022 552 05679	1µF 10% 16V 0805
2K63	2022 552 05679	1µF 10% 16V 0805
2M00	2238 869 15101	100pF 5% 50V 0402
2M01	2238 869 15101	100pF 5% 50V 0402
2M02	2238 869 15101	100pF 5% 50V 0402
2M03	2238 869 15101	100pF 5% 50V 0402
2M04	2238 869 15101	100pF 5% 50V 0402
2M06	2238 869 15101	100pF 5% 50V 0402
2M07	2238 869 15101	100pF 5% 50V 0402
2M08	2238 869 15101	100pF 5% 50V 0402
2M09	2238 869 15101	100pF 5% 50V 0402
2M10	2238 869 15101	100pF 5% 50V 0402
2M11	2020 552 96618	1nF 10% 50V 0402
2M12	2020 552 96618	1nF 10% 50V 0402
2M13	2238 869 15101	100pF 5% 50V 0402
2M16	2020 004 90283	10µF 20% 10V 1206
2M17	2020 004 90283	10µF 20% 10V 1206
2M18	4822 117 13605	Jumper 0402
2M19	2238 869 15101	100pF 5% 50V 0402
2M20	2238 869 15101	100pF 5% 50V 0402
2M21	2238 869 15101	100pF 5% 50V 0402
2M28	4822 117 13605	Jumper 0402
2M29	4822 117 13605	Jumper 0402
2M30	2238 869 15101	100pF 5% 50V 0402
2M31	2238 869 15101	100pF 5% 50V 0402
2M47	2238 869 15101	100pF 5% 50V 0402
2M49	2238 869 15101	100pF 5% 50V 0402
2M50	2238 869 15101	100pF 5% 50V 0402
2M51	2238 869 15101	100pF 5% 50V 0402
2M58	2238 869 15101	100pF 5% 50V 0402
2M59	2238 869 15101	100pF 5% 50V 0402
2M62	2238 869 15101	100pF 5% 50V 0402
2M63	2022 552 05679	1µF 10% 16V 0805
2M64	2022 552 05679	1µF 10% 16V 0805
2M65	2238 869 15101	100pF 5% 50V 0402
2M66	2238 869 15101	100pF 5% 50V 0402
2M67	2238 869 15101	100pF 5% 50V 0402
2M68	2238 869 15101	100pF 5% 50V 0402
2M69	2238 869 15101	100pF 5% 50V 0402
2M70	2238 869 15101	100pF 5% 50V 0402
2M71	2238 869 15101	100pF 5% 50V 0402
2M72	2238 586 59812	100nF 20% 50V 0603
2M73	2238 586 59812	100nF 20% 50V 0603
2M74	2238 586 59812	100nF 20% 50V 0603
2M75	2238 586 59812	100nF 20% 50V 0603
2M76	2238 586 59812	100nF 20% 50V 0603
2M77	2238 586 59812	100nF 20% 50V 0603
2M78	2238 586 59812	100nF 20% 50V 0603
2M80	2238 586 59812	100nF 20% 50V 0603
2M81	2238 586 59812	100nF 20% 50V 0603
2M82	2238 586 59812	100nF 20% 50V 0603
2M85	2238 586 59812	100nF 20% 50V 0603
2N20	2022 552 05679	1µF 10% 16V 0805
2N21	2238 586 59812	100nF 20% 50V 0603
2N22	2238 586 59812	100nF 20% 50V 0603
2N23	2238 787 15641	22nF 5% 16V 0402
2N31	2238 787 15641	22nF 5% 16V 0402
2N32	2238 787 15641	22nF 5% 16V 0402
2N33	2238 787 15641	22nF 5% 16V 0402
2N34	2238 787 15641	22nF 5% 16V 0402
2N40	2238 586 59812	100nF 20% 50V 0603
2N41	3198 032 55130	10µF 20% 20V
2N42	2022 552 05679	1µF 10% 16V 0805
2N43	2022 552 05679	1µF 10% 16V 0805
2N60	2022 552 05679	1µF 10% 16V 0805
2N61	2022 552 05679	1µF 10% 16V 0805
2N62	2022 552 05679	1µF 10% 16V 0805
2N63	2238 586 59812	100nF 20% 50V 0603
2N64	2022 552 05679	1µF 10% 16V 0805
2N65	2238 586 59812	100nF 20% 50V 0603
2N66	2022 552 05679	1µF 10% 16V 0805
2N68	2238 586 59812	100nF 20% 50V 0603
2N69	2022 552 05679	1µF 10% 16V 0805
2N70	2022 552 05679	1µF 10% 16V 0805
2N71	2022 552 05679	1µF 10% 16V 0805
2N72	2022 552 05679	1µF 10% 16V 0805
2N73	2022 552 05679	1µF 10% 16V 0805
2Q00	4822 124 11946	22µF 20% 16V
2Q01	4822 124 11946	22µF 20% 16V
2Q02	4822 124 11946	22µF 20% 16V
2Q03	4822 124 11946	22µF 20% 16V
2Q04	2238 586 59812	100nF 20% 50V 0603
2Q05	2238 586 59812	100nF 20% 50V 0603
2Q06	2238 586 59812	100nF 20% 50V 0603
2Q07	2238 586 59812	100nF 20% 50V 0603
2Q08	2238 586 59812	100nF 20% 50V 0603
2Q09	2238 586 59812	100nF 20% 50V 0603
2Q10	2238 586 59812	100nF 20% 50V 0603
2Q11	2238 586 59812	100nF 20% 50V 0603
2Q12	2238 586 59812	100nF 20% 50V 0603
2Q13	2238 586 59812	100nF 20% 50V 0603
2Q14	2238 586 59812	100nF 20% 50V 0603
2Q15	2238 586 59812	100nF 20% 50V 0603
2Q16	2238 586 59812	100nF 20% 50V 0603
2Q17	2238 586 59812	100nF 20% 50V 0603
2Q18	2238 586 59812	100nF 20% 50V 0603
2Q19	2238 586 59812	100nF 20% 50V 0603
2Q20	4822 124 11946	22µF 20% 16V
2Q21	4822 124 11946	22µF 20% 16V
2Q22	4822 124 11946	22µF 20% 16V
2Q23	4822 124 11946	22µF 20% 16V
2Q24	2238 586 59812	100nF 20% 50V 0603
2Q25	3198 034 01290	12pF 1% 50V 0402
2Q26	2238 586 59812	100nF 20% 50V 0603
2Q27	2238 586 59812	100nF 20% 50V 0603
2Q28	2238 586 59812	100nF 20% 50V 0603
2Q29	2238 869 15101	100pF 5% 50V 0402
2Q30	2238 586 59812	100nF 20% 50V 0603
2Q31	2238 587 15619	560pF 10% 50V 0402
2Q32	2238 586 59812	100nF 20% 50V 0603
2Q33	2238 586 59812	100nF 20% 50V 0603
2Q34	2238 586 59812	100nF 20% 50V 0603
2Q35	2238 586 59812	100nF 20% 50V 0603
2Q37	2238 586 59812	100nF 20% 50V 0603
2Q38	2238 586 59812	100nF 20% 50V 0603
2Q39	2238 586 59812	100nF 20% 50V 0603
2Q40	4822 124 11946	22µF 20% 16V
2Q41	4822 124 11946	22µF 20% 16V
2Q42	4822 124 11946	22µF 20% 16V
2Q43	4822 124 11946	22µF 20% 16V
2Q44	2238 586 59812	100nF 20% 50V 0603
2Q45	2238 586 59812	100nF 20% 50V 0603
2Q46	2238 586 59812	100nF 20% 50V 0603
2Q47	2238 586 59812	100nF 20% 50V 0603
2Q48	2238 586 59812	100nF 20% 50V 0603
2Q49	2238 586 59812	100nF 20% 50V 0603
2Q50	2238 586 59812	100nF 20% 50V 0603
2Q51	2238 586 59812	100nF 20% 50V 0603
2Q52	2238 586 59812	100nF 20% 50V 0603
2Q53	2238 586 59812	100nF 20% 50V 0603
2Q54	2238 586 59812	100nF 20% 50V 0603
2Q55	2238 586 59812	100nF 20% 50V 0603
2Q56	2238 586 59812	100nF 20% 50V 0603
2Q57	2238 586 59812	100nF 20% 50V 0603
2Q58	2238 586 59812	100nF 20% 50V 0603
2Q59	2238 586 59812	100nF 20% 50V 0603
2Q63	2238 586 59812	100nF 20% 50V 0603
2Q64	2238 586 59812	100nF 20% 50V 0603
2Q65	2238 586 59812	100nF 20% 50V 0603
2Q66	2238 586 59812	100nF 20% 50V 0603
2Q67	2238 586 59812	100nF 20% 50V 0603
2Q69	3198 032 47170	47µF 20% 16V
2Q70	3198 032 47170	47µF 20% 16V
2Q71	2238 586 59812	100nF 20% 50V 0603
2Q72	2020 552 96618	1nF 10% 50V 0402
2Q73	2238 869 15101	100pF 5% 50V 0402
2T01	2020 552 96683	220nF 10% 50V
2T02	2020 552 96628	10nF 10% 16V 0402
2T04	2020 552 96628	10nF 10% 16V 0402
2T05	2020 552 96628	10nF 10% 16V 0402
2T08	2020 552 96683	220nF 10% 50V
2T10	2238 869 75829	82pF 5% 50V 0402

2T11	3198 032 28210	220µF 20% 6.3V
2T12	2020 552 96628	10nF 10% 16V 0402
2T13	2238 869 75829	82pF 5% 50V 0402
2T18	2020 004 90283	10µF 20% 10V 1206
2U01	2020 552 96618	1nF 10% 50V 0402
2U02	2238 586 59812	100nF 20% 50V 0603
2U03	2238 586 59812	100nF 20% 50V 0603
2U04	2238 586 59812	100nF 20% 50V 0603
2U05	2020 552 96618	1nF 10% 50V 0402
2U06	2238 586 59812	100nF 20% 50V 0603
2U07	2238 586 59812	100nF 20% 50V 0603
2U08	3198 035 04710	470pF 50V 0402
2U09	2238 586 59812	100nF 20% 50V 0603
2U10	2020 552 96618	1nF 10% 50V 0402
2U11	2238 586 59812	100nF 20% 50V 0603
2U12	2238 586 59812	100nF 20% 50V 0603
2U13	3198 035 04710	470pF 50V 0402
2U14	2020 552 96618	1nF 10% 50V 0402
2U15	2238 586 59812	100nF 20% 50V 0603
2U16	2020 552 96618	1nF 10% 50V 0402
2U17	2238 586 59812	100nF 20% 50V 0603
2U18	2238 586 59812	100nF 20% 50V 0603
2U19	2020 552 96684	470nF 10% 25V 0805
2U20	2238 586 59812	100nF 20% 50V 0603
2U21	2238 586 59812	100nF 20% 50V 0603
2U22	2022 552 05679	1µF 10% 16V 0805
2U23	2022 552 05679	1µF 10% 16V 0805
2U24	2022 552 05679	1µF 10% 16V 0805
2U25	2020 552 96628	10nF 10% 16V 0402
2U26	2020 552 96628	10nF 10% 16V 0402
2U27	2020 552 96628	10nF 10% 16V 0402
2U28	2238 586 59812	100nF 20% 50V 0603
2U29	2020 552 96618	1nF 10% 50V 0402
2U30	3198 035 04710	470pF 50V 0402
2U40	2022 552 05679	1µF 10% 16V 0805
2U41	2022 552 05679	1µF 10% 16V 0805
2U42	2020 552 96684	470nF 10% 25V 0805
2U43	2020 552 96628	10nF 10% 16V 0402
2U44	2020 552 96628	10nF 10% 16V 0402
2U45	2020 552 96628	10nF 10% 16V 0402
2U46	2238 586 59812	100nF 20% 50V 0603
2U47	2020 552 96618	1nF 10% 50V 0402
2U50	2022 552 05679	1µF 10% 16V 0805
2U52	2238 787 15641	22nF 5% 16V 0402
2U53	2238 787 15641	22nF 5% 16V 0402
2U54	2020 552 96623	2.2nF 10% 50V 0402
2U55	2020 552 96628	10nF 10% 16V 0402
2U56	2020 552 96628	10nF 10% 16V 0402
2U57	2020 552 96628	10nF 10% 16V 0402
2U58	2022 552 05679	1µF 10% 16V 0805
2U59	5322 124 41945	22µF 20% 35V
2U60	5322 124 41945	22µF 20% 35V
2U61	5322 124 41945	22µF 20% 35V
2U62	2022 552 05635	22µF 10% 16V
2U63	2022 552 05635	22µF 10% 16V
2U66	2022 552 05635	22µF 10% 16V
2U67	2022 552 05635	22µF 10% 16V
2U69	2022 552 05635	22µF 10% 16V
2U70	2022 552 05635	22µF 10% 16V
2U71	2238 586 59812	100nF 20% 50V 0603
2U72	2020 552 96618	1nF 10% 50V 0402
2U73	2020 552 96618	1nF 10% 50V 0402
2U74	2020 552 96618	1nF 10% 50V 0402
2U75	2020 552 96618	1nF 10% 50V 0402
2U76	2020 552 96618	1nF 10% 50V 0402
2U77	2020 552 96618	1nF 10% 50V 0402
2U78	2020 552 96618	1nF 10% 50V 0402
2U79	2022 552 05635	22µF 10% 16V
2U80	2022 552 05635	22µF 10% 16V
2U81	2022 552 05635	22µF 10% 16V
2U87	2022 552 05679	1µF 10% 16V 0805
2U88	2238 586 59812	100nF 20% 50V 0603
2U90	2020 552 96623	2.2nF 10% 50V 0402
2U91	2020 552 96623	2.2nF 10% 50V 0402
2U92	2020 552 96623	2.2nF 10% 50V 0402
2V00	2238 586 59812	100nF 20% 50V 0603
2V01	2238 586 59812	100nF 20% 50V 0603
2V02	2238 586 59812	100nF 20% 50V 0603
2V03	2238 586 59812	100nF 20% 50V 0603
2V04	2022 029 00632	330µF 20% 6.3V
2V15	4822 124 11946	22µF 20% 16V
2V16	2238 586 59812	100nF 20% 50V 0603
2V17	2238 586 59812	100nF 20% 50V 0603
2V18	2238 586 59812	100nF 20% 50V 0603
2V19	2238 586 59812	100nF 20% 50V 0603
2V20	2238 586 59812	100nF 20% 50V 0603
2V21	2238 586 59812	100nF 20% 50V 0603
2V22	2238 586 59812	100nF 20% 50V 0603
2V23	2238 586 59812	100nF 20% 50V 0603
2V24	2238 586 59812	100nF 20% 50V 0603
2V25	2238 586 59812	100nF 20% 50V 0603
2V26	2238 586 59812	100nF 20% 50V 0603
2V27	2238 586 59812	100nF 20% 50V 0603
2V28	2238 586 59812	100nF 20% 50V 0603
2V29	2238 586 59812	100nF 20% 50V 0603
2V30	2238 586 59812	100nF 20% 50V 0603
2V31	2238 586 59812	100nF 20% 50V 0603
2V32	2238 586 59812	100nF 20% 50V 0603
2V33	2238 586 59812	100nF 20% 50V 0603
2V35	2238 586 59812	100nF 20% 50V 0603
2V36	2020 552 96618	1nF 10% 50V 0402
2V37	2238 869 15101	100pF 5% 50V 0402

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3C31▲	5322 117 11726	10Ω 5%
3C32	3198 031 01820	1.8kΩ 5% 0.01W 0402
3C34	3198 031 01220	1.2kΩ 5% 0.01W 0402
3C39	4822 117 13545	100Ω 1% 0402
3C40	4822 117 13545	100Ω 1% 0402
3C50	3198 031 04720	4.7kΩ 5% 0402
3C53	3198 031 03910	390Ω 1% 0402
3C56	3198 031 06820	6.8kΩ 5% 0.01W 0402
3C57	4822 117 13602	2.2kΩ 5% 0.01W 0402
3C60	3198 031 02730	27kΩ 5% 0402
3C62	3198 031 04720	4.7kΩ 5% 0402
3C63	4822 117 13545	100Ω 1% 0402
3C64	3198 031 01830	18kΩ 5% 0.01W 0402
3C65	3198 031 04720	4.7kΩ 5% 0402
3C67	3198 031 04720	4.7kΩ 5% 0402
3C78	3198 031 04730	47Ω 5% 0402
3C80	4822 117 13602	2.2kΩ 5% 0.01W 0402
3C82	3198 031 01810	180Ω 5% 0402
3C83	4822 117 13545	100Ω 1% 0402
3C84	3198 031 02710	270Ω 5% 0.1W 0402
3C85	4822 117 13596	220Ω 5% 0.01W 0402
3C87▲	4822 117 11748	Fuse 2.2Ω 5% 1206
3D20	4822 117 13606	10kΩ 5% 0.01W 0402
3D21	4822 117 13606	10kΩ 5% 0.01W 0402
3D22	4822 117 13606	10kΩ 5% 0.01W 0402
3D23	4822 117 13545	100Ω 1% 0402
3D24	3198 031 04730	47Ω 5% 0402
3D25▲	5322 117 11726	10Ω 5%
3D26	4822 117 13548	1kΩ 5% 0402
3D27	4822 051 30109	10Ω 5% 0.062W
3D28	4822 051 30109	10Ω 5% 0.062W
3D29	4822 117 11297	100kΩ 5% 0.1W
3D30	4822 117 13613	2.2Ω 5% 0603
3D31	3198 031 06820	6.8kΩ 5% 0.01W 0402
3D32	4822 117 13548	1kΩ 5% 0402
3D33	4822 117 13606	10kΩ 5% 0.01W 0402
3D34	2322 706 71002	1kΩ 1% 0402
3D35	2322 706 73902	3.9kΩ 1% 0402
3D36	3198 031 02720	2.7kΩ 5% 0.01W 0402
3D37	3198 031 04720	4.7kΩ 5% 0402
3D38	4822 117 13548	1kΩ 5% 0402
3D39	3198 031 04720	4.7kΩ 5% 0402
3D40	4822 117 13606	10kΩ 5% 0.01W 0402
3D41	4822 117 13606	10kΩ 5% 0.01W 0402
3D42	4822 117 13606	10kΩ 5% 0.01W 0402
3D80	4822 051 20478	4.7Ω 5% 0.1W
3D81	4822 117 13548	1kΩ 5% 0402
3D82	4822 117 13606	10kΩ 5% 0.01W 0402
3D83	3198 031 04740	470kΩ 5% 0402
3D84	4822 117 13606	10kΩ 5% 0.01W 0402
3D85	4822 117 13606	10kΩ 5% 0.01W 0402
3D86	3198 031 04730	47Ω 5% 0402
3D87	4822 117 13606	10kΩ 5% 0.01W 0402
3D88	4822 117 13606	10kΩ 5% 0.01W 0402
3D89	4822 051 30101	100Ω 5% 0.062W
3E00	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E01	4822 117 13606	10kΩ 5% 0.01W 0402
3E02	3198 031 04730	47Ω 5% 0402
3E03	3198 031 04730	47Ω 5% 0402
3E04	4822 117 13545	100Ω 1% 0402
3E05	4822 117 13545	100Ω 1% 0402
3E06	3198 031 04720	4.7kΩ 5% 0402
3E07	3198 031 04720	4.7kΩ 5% 0402
3E08	4822 117 13545	100Ω 1% 0402
3E09	4822 117 13545	100Ω 1% 0402
3E10	3198 031 04720	4.7kΩ 5% 0402
3E11	3198 031 04720	4.7kΩ 5% 0402
3E12	3198 031 04720	4.7kΩ 5% 0402
3E13	3198 031 03390	33Ω 1% 0402
3E14	3198 031 03390	33Ω 1% 0402
3E15	4822 117 13545	100Ω 1% 0402
3E16	4822 117 13545	100Ω 1% 0402
3E17	3198 031 03920	3.9kΩ 5% 0402
3E18	3198 031 03320	3.3kΩ 5% 0402
3E19	3198 031 08220	8.2kΩ 5% 0.5W
3E20	4822 117 11297	100kΩ 5% 0.1W
3E21	4822 117 11297	100kΩ 5% 0.1W
3E22	3198 031 06840	680kΩ 5% 0.01W 0402
3E25	4822 051 30101	100Ω 5% 0.062W
3E26	4822 051 30102	1kΩ 5% 0.062W
3E27	4822 117 11297	100kΩ 5% 0.1W
3E28	4822 051 30101	100Ω 5% 0.062W
3E29	4822 051 30102	1kΩ 5% 0.062W
3E30	4822 117 11297	100kΩ 5% 0.1W
3E31	4822 051 30101	100Ω 5% 0.062W
3E32	4822 051 30759	75Ω 5% 0.062W
3E33	5322 117 13056	8.2kΩ 1% 0.063W 0603
3E34	3198 031 03320	3.3kΩ 5% 0402
3E35	4822 051 30101	100Ω 5% 0.062W
3E36	4822 051 30759	75Ω 5% 0.062W
3E37	4822 051 30101	100Ω 5% 0.062W
3E38	4822 051 30759	75Ω 5% 0.062W
3E39	4822 051 30101	100Ω 5% 0.062W
3E40	4822 051 30759	75Ω 5% 0.062W
3E41	4822 051 30759	75Ω 5% 0.062W
3E42	4822 117 11297	100kΩ 5% 0.1W
3E43	4822 051 30101	100Ω 5% 0.062W
3E44	4822 051 30759	75Ω 5% 0.062W
3E45	4822 117 13606	10kΩ 5% 0.01W 0402
3E46	4822 117 11297	100kΩ 5% 0.1W
3E47	3198 031 04730	47Ω 5% 0402
3E48	3198 031 04730	47Ω 5% 0402
3E51	4822 117 13545	100Ω 1% 0402
3E52	4822 117 13545	100Ω 1% 0402
3E54	3198 031 04720	4.7kΩ 5% 0402
3E55	3198 031 04720	4.7kΩ 5% 0402
3E56	2350 033 11339	4 x 33Ω 5%
3E57	2350 033 11339	4 x 33Ω 5%
3E58	2350 033 11339	4 x 33Ω 5%
3E59	2350 033 11339	4 x 33Ω 5%
3E60	2350 033 11339	4 x 33Ω 5%
3E61	3198 031 03390	33Ω 1% 0402
3E62	4822 117 13545	100Ω 1% 0402
3E63	4822 117 13548	1kΩ 5% 0402
3E64	3198 031 01510	150Ω 5% 0.01W 0402
3E65	4822 117 13596	220Ω 5% 0.01W 0402
3E66	4822 117 13606	10kΩ 5% 0.01W 0402
3E67	3198 031 02240	220kΩ 5% 0.1W 0402
3E68	4822 117 11297	100kΩ 5% 0.1W
3E69	4822 117 13606	10kΩ 5% 0.01W 0402
3E71	4822 117 13548	1kΩ 5% 0402
3E72	3198 031 01510	150Ω 5% 0.01W 0402
3E73	4822 117 13596	220Ω 5% 0.01W 0402
3E74	4822 117 13606	10kΩ 5% 0.01W 0402
3E75	3198 031 02240	220kΩ 5% 0.1W 0402
3E76	3198 031 03390	33Ω 1% 0402
3E77	3198 031 03390	33Ω 1% 0402
3E78	3198 031 03390	33Ω 1% 0402
3E79	4822 117 13545	100Ω 1% 0402
3E80	2322 706 73901	390Ω 1% 0402
3E81	3198 031 03390	33Ω 1% 0402
3E82	3198 031 03390	33Ω 1% 0402
3E84	3198 031 04720	4.7kΩ 5% 0402
3E85	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E86	4822 117 13605	Jumper 0402
3E88	4822 117 13545	100Ω 1% 0402
3E89	4822 117 13545	100Ω 1% 0402
3E90	4822 117 13545	100Ω 1% 0402
3E91	4822 117 13545	100Ω 1% 0402
3E95	4822 117 13606	10kΩ 5% 0.01W 0402
3E96	4822 117 13606	10kΩ 5% 0.01W 0402
3E98	4822 117 13545	100Ω 1% 0402
3E99	4822 117 13545	100Ω 1% 0402
3EA0	8204 000 77491	VDR 90V 1mA 0402
3EA1	4822 117 13548	1kΩ 5% 0402
3EA2	4822 117 13548	1kΩ 5% 0402
3EA3	8204 000 77491	VDR 90V 1mA 0402
3EA4	8204 000 77491	VDR 90V 1mA 0402
3EA5	8204 000 77491	VDR 90V 1mA 0402
3EA6	8204 000 77491	VDR 90V 1mA 0402
3EA7	8204 000 77491	VDR 90V 1mA 0402
3EA8	8204 000 77491	VDR 90V 1mA 0402
3EA9	8204 000 77491	VDR 90V 1mA 0402
3F00	2350 033 10101	4 x 100Ω 5%
3F01	2350 033 10101	4 x 100Ω 5%
3F02	2350 033 10101	4 x 100Ω 5%
3F03	2350 033 10101	4 x 100Ω 5%
3F04	2350 033 10101	4 x 100Ω 5%
3F05	2350 033 10101	4 x 100Ω 5%
3F06	2350 033 10101	4 x 100Ω 5%
3F07	2350 033 10101	4 x 100Ω 5%
3F08	2350 033 10101	4 x 100Ω 5%
3F09	2350 033 10101	4 x 100Ω 5%
3F10	2350 033 11339	4 x 33Ω 5%
3F11	3198 031 05610	560Ω 5% 0.01W 0402
3F12	4822 117 13545	100Ω 1% 0402
3F13	3198 031 04720	4.7kΩ 5% 0402
3F14	3198 031 04720	4.7kΩ 5% 0402
3F15	4822 117 13606	10kΩ 5% 0.01W 0402
3F17	4822 117 13606	10kΩ 5% 0.01W 0402
3F22	4822 117 13545	100Ω 1% 0402
3F23	4822 117 13548	1kΩ 5% 0402
3F24	4822 117 13602	2.2kΩ 5% 0.01W 0402
3F25	4822 117 13545	100Ω 1% 0402
3F26	4822 117 13545	100Ω 1% 0402
3F27	3198 031 04720	4.7kΩ 5% 0402

F28	4822 117 13545	100Ω 1% 0402
F29	4822 117 13545	100Ω 1% 0402
F30	3198 031 04720	4.7kΩ 5% 0402
F31	4822 117 13545	100Ω 1% 0402
F32	3198 031 04720	4.7kΩ 5% 0402
F33	3198 031 04720	4.7kΩ 5% 0402
F34	4822 117 13545	100Ω 1% 0402
F35	3198 031 04720	4.7kΩ 5% 0402
F36	4822 117 13545	100Ω 1% 0402
F37	4822 117 13545	100Ω 1% 0402
F38	3198 031 04720	4.7kΩ 5% 0402
F39	4822 117 13545	100Ω 1% 0402
F40	4822 117 13545	100Ω 1% 0402
F41	4822 117 13545	100Ω 1% 0402
F42	4822 117 13602	2.2kΩ 5% 0.01W 0402
F43	4822 117 13602	2.2kΩ 5% 0.01W 0402
F44	4822 117 13606	10kΩ 5% 0.01W 0402
F45	4822 117 13545	100Ω 1% 0402
F46	4822 117 13545	100Ω 1% 0402
F47	4822 117 13606	10kΩ 5% 0.01W 0402
F49	4822 117 13548	1kΩ 5% 0402
F50	3198 031 04720	4.7kΩ 5% 0402
F51	3198 031 04720	4.7kΩ 5% 0402
F52	3198 031 04720	4.7kΩ 5% 0402
F53	3198 031 04720	4.7kΩ 5% 0402
F55	3198 031 04720	4.7kΩ 5% 0402
F56	3198 031 04720	4.7kΩ 5% 0402
F57	3198 031 05610	560Ω 5% 0.01W 0402
3F58	4822 117 13545	100Ω 1% 0402
3F59	4822 117 13545	100Ω 1% 0402
3F60	4822 117 13606	10kΩ 5% 0.01W 0402
3F61	4822 117 13606	10kΩ 5% 0.01W 0402
3F62	4822 117 13545	100Ω 1% 0402
3F63	4822 117 13545	100Ω 1% 0402
3F64	3198 031 08220	8.2kΩ 5% 0.5W
3F65	3198 031 03930	39kΩ 5% 0402
3F66	3198 031 04720	4.7kΩ 5% 0402
3F68	3198 031 04720	4.7kΩ 5% 0402
3F70	3198 031 04720	4.7kΩ 5% 0402
3F71	3198 031 04720	4.7kΩ 5% 0402
3F72	3198 031 04720	4.7kΩ 5% 0402
3F73	3198 031 04720	4.7kΩ 5% 0402
3F74	3198 031 04720	4.7kΩ 5% 0402
3F75	3198 031 04720	4.7kΩ 5% 0402
3F82	4822 117 13545	100Ω 1% 0402
3F83	4822 117 13545	100Ω 1% 0402
3F84	4822 117 13606	10kΩ 5% 0.01W 0402
3F85	4822 117 13606	10kΩ 5% 0.01W 0402
3F86	4822 117 13545	100Ω 1% 0402
3F87	4822 117 13545	100Ω 1% 0402
3F88	4822 117 13545	100Ω 1% 0402
3F89	4822 117 13548	1kΩ 5% 0402
3F90	4822 117 13545	100Ω 1% 0402
3F91	4822 117 13545	100Ω 1% 0402
3F92	4822 117 13606	10kΩ 5% 0.01W 0402
3F97	4822 117 13606	10kΩ 5% 0.01W 0402
3F98	4822 117 13606	10kΩ 5% 0.01W 0402
3F99	4822 117 13606	10kΩ 5% 0.01W 0402
3G14	4822 117 13548	1kΩ 5% 0402
3G19	4822 117 13548	1kΩ 5% 0402
3G29	4822 117 13546	47Ω 5% 0402
3G30	4822 117 13606	10kΩ 5% 0.01W 0402
3G33	4822 117 13606	10kΩ 5% 0.01W 0402
3G34	4822 117 13601	22kΩ 5% 0402
3G37	4822 117 13602	2.2kΩ 5% 0.01W 0402
3G47	4822 117 13606	10kΩ 5% 0.01W 0402
3G53	4822 117 13605	Jumper 0402
3G71	4822 117 13606	10kΩ 5% 0.01W 0402
3G72	4822 117 13606	10kΩ 5% 0.01W 0402
3G73	4822 117 13606	10kΩ 5% 0.01W 0402
3G75	4822 117 13606	10kΩ 5% 0.01W 0402
3G76	4822 117 13602	2.2kΩ 5% 0.01W 0402
3G77	4822 117 13606	10kΩ 5% 0.01W 0402
3G78	4822 117 13546	47Ω 5% 0402
3H00	3198 031 04720	4.7kΩ 5% 0402
3H01	3198 031 04720	4.7kΩ 5% 0402
3H02	3198 031 04720	4.7kΩ 5% 0402
3H03	3198 031 04720	4.7kΩ 5% 0402
3H04	3198 031 04720	4.7kΩ 5% 0402
3H05	4822 117 13606	10kΩ 5% 0.01W 0402
3H07	3198 031 03390	33Ω 1% 0402
3H08	3198 031 04720	4.7kΩ 5% 0402
3H09	3198 031 04720	4.7kΩ 5% 0402
3H10	3198 031 04720	4.7kΩ 5% 0402
3H11	3198 031 04720	4.7kΩ 5% 0402
3H12	4822 117 13605	Jumper 0402
3H13	3198 031 04720	4.7kΩ 5% 0402
3H14	4822 117 13605	Jumper 0402
3H15	3198 031 04720	4.7kΩ 5% 0402
3H16	3198 031 04720	4.7kΩ 5% 0402
3H17	4822 117 13606	10kΩ 5% 0.01W 0402
3H18	3198 031 04720	4.7kΩ 5% 0402
3H19	4822 117 13548	1kΩ 5% 0402
3H20	2322 705 70399	39Ω 5% 0402

3H21	2322 705 70399	39Ω 5% 0402
3H22	3198 031 06890	68Ω 5% 0402
3H23	3198 031 06890	68Ω 5% 0402
3H24	3198 031 06890	68Ω 5% 0402
3H25	3198 031 06890	68Ω 5% 0402
3H27	3198 031 06890	68Ω 5% 0402
3H28	3198 031 04720	4.7kΩ 5% 0402
3H31	3198 031 04720	4.7kΩ 5% 0402
3H32	3198 031 04720	4.7kΩ 5% 0402
3H33	2350 033 11479	4x 47Ω 5%
3H34	2350 033 11479	4x 47Ω 5%
3H35	2350 033 11479	4x 47Ω 5%
3H36	2350 033 11479	4x 47Ω 5%
3H37	2350 033 11479	4x 47Ω 5%
3H38	2350 033 11479	4x 47Ω 5%
3H39	2350 033 11479	4x 47Ω 5%
3H40	2350 033 11479	4x 47Ω 5%
3H41	3198 031 03390	33Ω 1% 0402
3H45	4822 117 13546	47Ω 5% 0402
3H46	4822 117 13546	47Ω 5% 0402
3H47	4822 117 13546	47Ω 5% 0402
3H65	3198 031 03390	33Ω 1% 0402
3H66	3198 031 03390	33Ω 1% 0402
3H67	3198 031 06890	68Ω 5% 0402
3H70	3198 031 04720	4.7kΩ 5% 0402
3H72	4822 117 13545	100Ω 1% 0402
3H73	3198 031 02290	22Ω 5% 0.1W 0402
3H74	3198 031 02290	22Ω 5% 0.1W 0402
3H75	4822 117 13545	100Ω 1% 0402
3H76	3198 031 06890	68Ω 5% 0402
3H77	3198 031 06890	68Ω 5% 0402
3H78	4822 117 13605	Jumper 0402
3H79	3198 031 02290	22Ω 5% 0.1W 0402
3H80	4822 117 13605	Jumper 0402
3H81	4822 117 13605	Jumper 0402
3H82	3198 031 01050	1MΩ 5% 0402
3H83	3198 031 04720	4.7kΩ 5% 0402
3H84	3198 031 04720	4.7kΩ 5% 0402
3H85	3198 031 04720	4.7kΩ 5% 0402
3H86	3198 031 04720	4.7kΩ 5% 0402
3H87	3198 031 04720	4.7kΩ 5% 0402
3H88	3198 031 04720	4.7kΩ 5% 0402
3H90	3198 031 04720	4.7kΩ 5% 0402
3H92	3198 031 07590	75Ω 5% 0402
3H93	3198 031 04720	4.7kΩ 5% 0402
3H94	3198 031 04720	4.7kΩ 5% 0402
3H95	4822 117 13597	330Ω 5% 0402 0.01W
3H96	4822 117 13605	Jumper 0402
3H97	3198 031 04720	4.7kΩ 5% 0402
3H98	4822 117 13545	100Ω 1% 0402
3H99	4822 117 13545	100Ω 1% 0402
3I01	4822 117 11297	100kΩ 5% 0.1W
3I02	4822 117 11297	100kΩ 5% 0.1W
3I03	4822 117 13545	100Ω 1% 0402
3I04	3198 031 07590	75Ω 5% 0402
3I05	4822 117 13596	220Ω 5% 0.01W 0402
3I06	4822 051 30101	100Ω 5% 0.062W
3I07	4822 117 11297	100kΩ 5% 0.1W
3I08	4822 051 30101	100Ω 5% 0.062W
3I09	4822 117 11297	100kΩ 5% 0.1W
3I10	3198 031 08230	82kΩ 5% 0402
3I11	3198 031 03920	3.9kΩ 5% 0402
3I12	3198 031 05630	56kΩ 5% 0402
3I13	3198 031 02290	22Ω 5% 0.1W 0402
3I14	4822 117 13548	1kΩ 5% 0402
3I15	3198 031 01820	1.8kΩ 5% 0.01W 0402
3I16	3198 031 01210	120Ω 5% 0.01W 0402
3I19	3198 031 02730	27kΩ 5% 0402
3I22	4822 051 30102	1kΩ 5% 0.062W
3I23	4822 117 11297	100kΩ 5% 0.1W
3I24	4822 051 30102	1kΩ 5% 0.062W
3I25	4822 051 30102	1kΩ 5% 0.062W
3I26	4822 117 11297	100kΩ 5% 0.1W
3I27	3198 031 01510	150Ω 5% 0.01W 0402
3I28	4822 051 30102	1kΩ 5% 0.062W
3I43	4822 117 13545	100Ω 1% 0402
3I44	4822 117 13545	100Ω 1% 0402
3I45	4822 117 13545	100Ω 1% 0402
3I50	4822 117 13601	22kΩ 5% 0402
3I51	3198 031 04730	47Ω 5% 0402
3I52	3198 031 06890	68Ω 5% 0402
3I57	3198 031 06890	68Ω 5% 0402
3I58▲	4822 117 11748	Fuse 2.2Ω 5% 1206
3I66	4822 117 13548	1kΩ 5% 0402
3I67	4822 117 13545	100Ω 1% 0402
3I68	4822 117 13545	100Ω 1% 0402
3I71	3198 031 01510	150Ω 5% 0.01W 0402
3I72	4822 117 13548	1kΩ 5% 0402
3I73	3198 031 01510	150Ω 5% 0.01W 0402
3I74	4822 117 13548	1kΩ 5% 0402
3I87	3198 031 01510	150Ω 5% 0.01W 0402
3I88	4822 117 13548	1kΩ 5% 0402
3I89	3198 031 01510	150Ω 5% 0.01W 0402
3I90	4822 117 13548	1kΩ 5% 0402

3I91	3198 031 04730	47Ω 5% 0402
3J01	4822 117 13605	Jumper 0402
3J02	3198 031 04730	47Ω 5% 0402
3J04	3198 031 01830	18kΩ 5% 0.01W 0402
3J07	4822 117 13601	22kΩ 5% 0402
3J08	3198 031 04730	47Ω 5% 0402
3J10	3198 031 01830	18kΩ 5% 0.01W 0402
3J18	3198 031 04730	47Ω 5% 0402
3J19	4822 117 13601	22kΩ 5% 0402
3J20	3198 031 04730	47Ω 5% 0402
3J21	3198 031 04730	47Ω 5% 0402
3J23	4822 117 13601	22kΩ 5% 0402
3J24	3198 031 04730	47Ω 5% 0402
3J27	4822 117 13601	22kΩ 5% 0402
3J28	4822 117 13603	33kΩ 5% 0402
3J29	4822 117 13603	33kΩ 5% 0402
3J33	4822 117 13606	10kΩ 5% 0.01W 0402
3J40	3198 031 06890	68Ω 5% 0402
3J50	4822 117 13545	100Ω 1% 0402
3J51	4822 117 13545	100Ω 1% 0402
3J52	4822 117 13545	100Ω 1% 0402
3J53	4822 117 13545	100Ω 1% 0402
3J54	4822 117 13545	100Ω 1% 0402
3J55	4822 117 13545	100Ω 1% 0402
3J56	4822 117 13545	100Ω 1% 0402
3J57	4822 117 13545	100Ω 1% 0402
3J58	4822 117 13545	100Ω 1% 0402
3J59	4822 117 13545	100Ω 1% 0402
3J60	4822 117 13545	100Ω 1% 0402
3J61	4822 117 13545	100Ω 1% 0402
3J62	4822 117 13545	100Ω 1% 0402
3J63	4822 117 13545	100Ω 1% 0402
3J64	4822 117 13545	100Ω 1% 0402
3J65	4822 117 13545	100Ω 1% 0402
3J66	3198 031 04720	4.7kΩ 5% 0402
3J69	3198 031 04720	4.7kΩ 5% 0402
3J70	3198 031 02290	22Ω 5% 0.1W 0402
3J71	4822 117 13545	100Ω 1% 0402
3J74	4822 117 13606	10kΩ 5% 0.01W 0402
3J76	3198 031 04720	4.7kΩ 5% 0402
3J85	4822 117 13545	100Ω 1% 0402
3J86	4822 117 13545	100Ω 1% 0402
3J88	3198 031 04720	4.7kΩ 5% 0402
3K00	4822 117 13545	100Ω 1% 0402
3K01	4822 117 13545	100Ω 1% 0402
3K02	3198 031 01210	120Ω 5% 0.01W 0402
3K09	4822 117 13548	1kΩ 5% 0402
3K14	4822 117 13548	1kΩ 5% 0402
3K17	4822 117 13605	Jumper 0402
3K31	3198 031 03390	33Ω 1% 0402
3K32	3198 031 03390	33Ω 1% 0402
3K33	3198 031 03390	33Ω 1% 0402
3K34	3198 031 03390	33Ω 1% 0402
3K35	2350 033 11339	4 x 33Ω 5%
3K36	2350 033 11339	4 x 33Ω 5%
3K37	4822 117 13606	10kΩ 5% 0.01W 0402
3M01	4822 117 13596	220Ω 5% 0.01W 0402
3M02	4822 117 13596	220Ω 5% 0.01W 0402
3M03	4822 117 13596	220Ω 5% 0.01W 0402
3M04	4822 117 13596	220Ω 5% 0.01W 0402
3M05	4822 117 13596	220Ω 5% 0.01W 0402
3M07	4822 117 13596	220Ω 5% 0.01W 0402
3M08	4822 117 13596	220Ω 5% 0.01W 0402
3M10	4822 117 13545	100Ω 1% 0402
3M12	2322 734 63309	33Ω 1% 0.1W 0805
3M13	2322 734 63309	33Ω 1% 0.1W 0805
3M14	4822 117 13548	1kΩ 5% 0402
3M15	4822 117 13548	1kΩ 5% 0402
3M16	4822 117 13545	100Ω 1% 0402
3M17	4822 117 13545	100Ω 1% 0402
3M18	2322 734 63309	33Ω 1% 0.1W 0805
3M19	2322 734 63309	33Ω 1% 0.1W 0805
3M20	4822 117 13596	220Ω 5% 0.01W 0402
3M21	4822 117 13596	220Ω 5% 0.01W 0402
3M22	4822 117 13596	220Ω 5% 0.01W 0402
3M23	4822 117 13545	100Ω 1% 0402
3M30	4822 117 13596	220Ω 5% 0.01W 0402
3M31	4822 117 13596	220Ω 5% 0.01W 0402
3M33	4822 117 13596	220Ω 5% 0.01W 0402
3M34	4822 117 13596	220Ω 5% 0.01W 0402
3M35	4822 117 13596	220Ω 5% 0.01W 0402
3M36	4822 117 13596	220Ω 5% 0.01W 0402
3M40	4822 117 13606	10kΩ 5% 0.01W 0402
3M41	4822 117 13601	22kΩ 5% 0402
3M42	4822 117 13606	10kΩ 5% 0.01W 0402
3M43	4822 117 13596	220Ω 5% 0.01W 0402
3M46	4822 117 13603	33kΩ 5% 0402
3M47	4822 117 13548	1kΩ 5% 0402
3M55	4822 117 13545	100Ω 1% 0402
3N00	4822 117 13606	10kΩ 5% 0.01W 0402
3N01	3198 031 04720	4.7kΩ 5% 0402
3N02	3198 031 04720	4.7kΩ 5% 0402
3N03	3198 031 04720	4.7kΩ 5% 0402
3N04	3198 031 03930	39kΩ 5% 0402

3N05	3198 031 04720	4.7kΩ 5% 0402
3N06	3198 031 04720	4.7kΩ 5% 0402
3N07	3198 031 08220	8.2kΩ 5% 0.5W
3N08	3198 031 03930	39kΩ 5% 0402
3N09	3198 031 08220	8.2kΩ 5% 0.5W
3N10	3198 031 04720	4.7kΩ 5% 0402
3N11	3198 031 04720	4.7kΩ 5% 0402
3N12	3198 031 04720	4.7kΩ 5% 0402
3N14	3198 031 04720	4.7kΩ 5% 0402
3N15	3198 031 04720	4.7kΩ 5% 0402
3N16	3198 031 04720	4.7kΩ 5% 0402
3N17	3198 031 04720	4.7kΩ 5% 0402
3N18	3198 031 03930	39kΩ 5% 0402
3N19	3198 031 08220	8.2kΩ 5% 0.5W
3N20	3198 031 03930	39kΩ 5% 0402
3N21	3198 031 08220	8.2kΩ 5% 0.5W
3N22	3198 031 05630	56kΩ 5% 0402
3N23	3198 031 02240	220kΩ 5% 0.1W 0402
3N24	2350 033 10101	4 x 100Ω 5%
3N25	3198 031 04720	4.7kΩ 5% 0402
3N26	4822 117 13606	10kΩ 5% 0.01W 0402
3N27	4822 117 13606	10kΩ 5% 0.01W 0402
3N28	2322 705 70108	1Ω 5% 0402
3N29	3198 031 04730	47Ω 5% 0402
3N30	2322 705 70108	1Ω 5% 0402
3N31	4822 117 13601	22kΩ 5% 0402
3N32	3198 031 01540	150kΩ 5% 0402
3N33	2322 705 70108	1Ω 5% 0402
3N34	2322 705 70108	1Ω 5% 0402
3N35	4822 117 13606	10kΩ 5% 0.01W 0402
3N36	2322 705 70108	1Ω 5% 0402
3N37	2322 705 70184	180Ω 5% 0402
3N38	2322 705 70108	1Ω 5% 0402
3N39	2322 705 70274	270kΩ 5% 0402
3N40	4822 117 13603	33kΩ 5% 0402
3N41	4822 117 13606	10kΩ 5% 0.01W 0402
3N42	4822 117 13548	1kΩ 5% 0402
3N43	4822 117 13602	2.2kΩ 5% 0.01W 0402
3N44	4822 117 13602	2.2kΩ 5% 0.01W 0402
3N45	4822 117 13606	10kΩ 5% 0.01W 0402
3N46	4822 117 13601	22kΩ 5% 0402
3N47	3198 031 08230	82kΩ 5% 0402
3N48	4822 117 13606	10kΩ 5% 0.01W 0402
3N50	4822 117 13606	10kΩ 5% 0.01W 0402
3N51	4822 117 13602	2.2kΩ 5% 0.01W 0402
3N52	3198 031 04720	4.7kΩ 5% 0402
3N53	3198 031 04720	4.7kΩ 5% 0402
3N54	2350 033 11472	4x 4.7kΩ 5%
3N55	2350 033 11472	4x 4.7kΩ 5%
3N56	3198 031 08230	82kΩ 5% 0402
3N57	4822 117 13548	1kΩ 5% 0402
3N58	3198 031 03390	33Ω 1% 0402
3N59	4822 117 13597	330Ω 5% 0402 0.01W
3N60	3198 031 04730	47Ω 5% 0402
3N61	4822 117 13597	330Ω 5% 0402 0.01W
3N62	4822 117 13606	10kΩ 5% 0.01W 0402
3N63	4822 117 13601	22kΩ 5% 0402
3N69	3198 031 03390	33Ω 1% 0402
3N70	3198 031 04720	4.7kΩ 5% 0402
3N71	4822 117 13606	10kΩ 5% 0.01W 0402
3N72	4822 117 13606	10kΩ 5% 0.01W 0402
3N73	3198 031 04740	470kΩ 5% 0402
3N74	4822 117 11297	100kΩ 5% 0.1W
3N75	4822 117 11297	100kΩ 5% 0.1W
3N76	4822 117 13606	10kΩ 5% 0.01W 0402
3N77	4822 117 11297	100kΩ 5% 0.1W
3N78	2322 705 70106	10MΩ 5% 0402
3N79	3198 031 03340	330kΩ 5% 0402
3N80	3198 031 03340	330kΩ 5% 0402
3N90	4822 117 11297	100kΩ 5% 0.1W
3N92	4822 051 20478	4.7Ω 5% 0.1W
3N93	4822 117 11297	100kΩ 5% 0.1W
3N94	4822 051 20478	4.7Ω 5% 0.1W
3N95	4822 117 11297	100kΩ 5% 0.1W
3N96	4822 051 20478	4.7Ω 5% 0.1W
3N97	4822 117 11297	100kΩ 5% 0.1W
3N99	3198 031 01820	1.8kΩ 5% 0.01W 0402
3Q00	4822 117 13546	47Ω 5% 0402
3Q01	3198 031 01210	120Ω 5% 0.01W 0402
3Q03	3198 031 07590	75Ω 5% 0402
3Q06	3198 031 07590	75Ω 5% 0402
3Q10	4822 117 13545	100Ω 1% 0402
3Q11	4822 117 13545	100Ω 1% 0402
3Q12	4822 117 13545	100Ω 1% 0402
3Q13	4822 117 13545	100Ω 1% 0402
3Q14	4822 117 13545	100Ω 1% 0402
3Q15	4822 117 13545	100Ω 1% 0402
3Q16	3198 031 01530	15kΩ 5% 0.01W 0402
3Q17	3198 031 01530	15kΩ 5% 0.01W 0402
3Q18	3198 031 01530	15kΩ 5% 0.01W 0402
3Q19	3198 031 02290	22Ω 5% 0.1W 0402
3Q20	3198 031 02290	22Ω 5% 0.1W 0402
3Q21	3198 031 02290	22Ω 5% 0.1W 0402
3Q22	3198 031 02290	22Ω 5% 0.1W 0402

3Q23	3198 031 01530	15kΩ 5% 0.01W 0402
3Q24	3198 031 04720	4.7kΩ 5% 0402
3Q26	3198 031 04720	4.7kΩ 5% 0402
3Q27	3198 031 04720	4.7kΩ 5% 0402
3Q28	3198 031 04720	4.7kΩ 5% 0402
3Q31	3198 031 04720	4.7kΩ 5% 0402
3Q32	3198 031 04720	4.7kΩ 5% 0402
3Q70	3198 031 04720	4.7kΩ 5% 0402
3T04	4822 117 13545	100Ω 1% 0402
3T06	4822 117 13545	100Ω 1% 0402
3T07	4822 117 13545	100Ω 1% 0402
3T09	4822 117 13545	100Ω 1% 0402
3T11▲	4822 117 11152	4.7Ω 5%
3T13	3198 031 01210	120Ω 5% 0.01W 0402
3T14	3198 031 01210	120Ω 5% 0.01W 0402
3T15▲	4822 117 11152	4.7Ω 5%
3T16	4822 117 13543	470Ω 5% 0402
3T17	4822 117 13543	470Ω 5% 0402
3T18	4822 117 11297	100kΩ 5% 0.1W
3T19	3198 031 02720	2.7kΩ 5% 0.01W 0402
3T20	4822 117 13545	100Ω 1% 0402
3T21	4822 117 13545	100Ω 1% 0402
3T22	3198 031 03920	3.9kΩ 5% 0402
3T23	3198 031 03920	3.9kΩ 5% 0402
3T24	4822 117 13601	22kΩ 5% 0402
3T25	4822 117 13601	22kΩ 5% 0402
3U01	4822 117 13606	10kΩ 5% 0.01W 0402
3U02	4822 117 13606	10kΩ 5% 0.01W 0402
3U03	4822 117 13606	10kΩ 5% 0.01W 0402
3U04	2322 706 71002	1kΩ 1% 0402
3U05	3198 031 02720	2.7kΩ 5% 0.01W 0402
3U06	3198 031 04720	4.7kΩ 5% 0402
3U07▲	5322 117 11726	10Ω 5%
3U08▲	5322 117 11726	10Ω 5%
3U09	4822 117 13548	1kΩ 5% 0402
3U10	3198 031 02720	2.7kΩ 5% 0.01W 0402
3U11	2322 706 71002	1kΩ 1% 0402
3U12	2322 706 73901	390Ω 1% 0402
3U13	2322 706 71002	1kΩ 1% 0402
3U14	4822 117 13548	1kΩ 5% 0402
3U15	4822 117 11297	100kΩ 5% 0.1W
3U16	3198 031 02720	2.7kΩ 5% 0.01W 0402
3U17	4822 117 13548	1kΩ 5% 0402
3U18	3198 031 04730	47Ω 5% 0402
3U19	3198 031 04730	47Ω 5% 0402
3U20	3198 031 04730	47Ω 5% 0402
3U21	4822 117 13606	10kΩ 5% 0.01W 0402
3U22	4822 117 13606	10kΩ 5% 0.01W 0402
3U23	4822 117 13606	10kΩ 5% 0.01W 0402
3U24	4822 117 13606	10kΩ 5% 0.01W 0402
3U25	4822 117 13606	10kΩ 5% 0.01W 0402
3U26	4822 117 13606	10kΩ 5% 0.01W 0402
3U27	2322 706 75601	560Ω 1% 0402
3U28	2322 706 72702	2.7kΩ 1% 0402
3U29	3198 031 06820	6.8kΩ 5% 0.01W 0402
3U30	4822 117 13601	22kΩ 5% 0402
3U31	4822 117 11297	100kΩ 5% 0.1W
3U32▲	5322 117 11726	10Ω 5%
3U33	4822 117 11297	100kΩ 5% 0.1W
3U34	3198 031 04730	47Ω 5% 0402
3U35	3198 031 04730	47Ω 5% 0402
3U37	3198 031 06820	6.8kΩ 5% 0.01W 0402
3U38	3198 031 06820	6.8kΩ 5% 0.01W 0402
3U39	3198 031 06820	6.8kΩ 5% 0.01W 0402
3U40	4822 117 13548	1kΩ 5% 0402
3U41	4822 117 13548	1kΩ 5% 0402
3U42	4822 117 13548	1kΩ 5% 0402
3U43	3198 031 04730	47Ω 5% 0402
3U44	3198 031 01050	1MΩ 5% 0402
3U45	4822 051 30109	10Ω 5% 0.062W
3U46	4822 117 13613	2.2Ω 5% 0603
3U47	4822 051 30109	10Ω 5% 0.062W
3U48	4822 117 13613	2.2Ω 5% 0603
3U49	4822 051 30109	10Ω 5% 0.062W
3U50	4822 117 13613	2.2Ω 5% 0603
3U51	4822 117 13545	100Ω 1% 0402
3U52	4822 051 30102	1kΩ 5% 0.062W
3U53	4822 117 13597	330Ω 5% 0402 0.01W
3U54	4822 051 30109	10Ω 5% 0.062W
3U55	4822 051 30109	10Ω 5% 0.062W
3U56	4822 051 30109	10Ω 5% 0.062W
3U57	4822 117 11297	100kΩ 5% 0.1W
3U58	4822 051 20478	4.7Ω 5% 0.1W
3U59	4822 051 20478	4.7Ω 5% 0.1W
3U60	4822 051 20478	4.7Ω 5% 0.1W
3U61	4822 117 13606	10kΩ 5% 0.01W 0402
3U62	4822 117 13548	1kΩ 5% 0402
3U67	4822 117 10353	150Ω 1% 0.1W
3U68	4822 117 10353	150Ω 1% 0.1W
3U69	4822 051 20478	4.7Ω 5% 0.1W
3U71	4822 117 13548	1kΩ 5% 0402
3U72	3198 031 01210	120Ω 5% 0.01W 0402
3U73	4822 117 13596	220Ω 5% 0.01W 0402
3U74	4822 117 13606	10kΩ 5% 0.01W 0402

3U75	3198 031 01510	150Ω 5% 0.01W 0402
3U76	4822 117 13596	220Ω 5% 0.01W 0402
3U77	4822 117 13606	10kΩ 5% 0.01W 0402
3U78	4822 117 13548	1kΩ 5% 0402
3U79	4822 117 13545	100Ω 1% 0402
3U80	4822 117 13606	10kΩ 5% 0.01W 0402
3U81	4822 051 30109	10Ω 5% 0.062W
3U82	4822 117 13545	100Ω 1% 0402
3U83	4822 117 13596	220Ω 5% 0.01W 0402
3U84	4822 117 13545	100Ω 1% 0402
3U85	4822 117 13548	1kΩ 5% 0402
3U86	4822 117 13545	100Ω 1% 0402
3U87	4822 117 13548	1kΩ 5% 0402
3U88	4822 117 13545	100Ω 1% 0402
3U89	4822 117 13545	100Ω 1% 0402
3V00	3198 031 02290	22Ω 5% 0.1W 0402
3V01	3198 031 02290	22Ω 5% 0.1W 0402
3V02	3198 031 02290	22Ω 5% 0.1W 0402
3V03	3198 031 02290	22Ω 5% 0.1W 0402
3V04	3198 031 02290	22Ω 5% 0.1W 0402
3V05	3198 031 02290	22Ω 5% 0.1W 0402
3V06	3198 031 02290	22Ω 5% 0.1W 0402
3V07	3198 031 02290	22Ω 5% 0.1W 0402
3V08	3198 031 02290	22Ω 5% 0.1W 0402
3V09	3198 031 02290	22Ω 5% 0.1W 0402
3V10	3198 031 02290	22Ω 5% 0.1W 0402
3V11	3198 031 02290	22Ω 5% 0.1W 0402
3V12	3198 031 02290	22Ω 5% 0.1W 0402
3V13	3198 031 02290	22Ω 5% 0.1W 0402
3V14	3198 031 02290	22Ω 5% 0.1W 0402
3V15	3198 031 02290	22Ω 5% 0.1W 0402
3V16	3198 031 02290	22Ω 5% 0.1W 0402
3V17	3198 031 02290	22Ω 5% 0.1W 0402
3V18	3198 031 02290	22Ω 5% 0.1W 0402
3V19	3198 031 02290	22Ω 5% 0.1W 0402
3V20	3198 031 02290	22Ω 5% 0.1W 0402
3V21	3198 031 02290	22Ω 5% 0.1W 0402
3V22	3198 031 02290	22Ω 5% 0.1W 0402
3V23	3198 031 02290	22Ω 5% 0.1W 0402
3V32	3198 031 02290	22Ω 5% 0.1W 0402
3V33	3198 031 02290	22Ω 5% 0.1W 0402
3V34	3198 031 02290	22Ω 5% 0.1W 0402
3V35	3198 031 02290	22Ω 5% 0.1W 0402
3V36	3198 031 02290	22Ω 5% 0.1W 0402
3V37	3198 031 02290	22Ω 5% 0.1W 0402
3V38	3198 031 02290	22Ω 5% 0.1W 0402
3V39	3198 031 02290	22Ω 5% 0.1W 0402
3V40	3198 031 02290	22Ω 5% 0.1W 0402
3V41	3198 031 02290	22Ω 5% 0.1W 0402
3V42	3198 031 02290	22Ω 5% 0.1W 0402
3V43	3198 031 02290	22Ω 5% 0.1W 0402
3V44	4822 117 13545	100Ω 1% 0402
3V78	4822 117 13548	1kΩ 5% 0402
3V79	4822 117 13606	10kΩ 5% 0.01W 0402
3V80	4822 117 13606	10kΩ 5% 0.01W 0402
9C01	4822 117 13605	Jumper 0402
9C23	4822 117 13605	Jumper 0402
9C51	4822 117 13605	Jumper 0402
9C53	4822 117 13605	Jumper 0402
9C55	4822 117 13605	Jumper 0402
9C57	4822 117 13605	Jumper 0402
9D83	4822 117 13605	Jumper 0402
9E00	4822 051 20008	Jumper 0805
9E02	4822 051 20008	Jumper 0805
9E14	4822 117 13605	Jumper 0402
9E16	4822 117 13605	Jumper 0402
9E19	4822 117 13605	Jumper 0402
9E21	4822 117 13605	Jumper 0402
9E27	4822 117 13605	Jumper 0402
9E28	4822 117 13605	Jumper 0402
9E30	4822 117 13605	Jumper 0402
9E31	4822 051 20008	Jumper 0805
9E32	4822 051 20008	Jumper 0805
9E36	4822 117 13605	Jumper 0402
9E37	4822 117 13605	Jumper 0402
9E38	4822 117 13605	Jumper 0402
9E39	4822 117 13605	Jumper 0402
9E41	4822 117 13605	Jumper 0402
9E55	4822 117 13605	Jumper 0402
9E56	4822 117 13605	Jumper 0402
9E57	4822 117 13605	Jumper 0402
9E58	4822 117 13605	Jumper 0402
9E59	4822 117 13605	Jumper 0402
9E60	4822 117 13605	Jumper 0402
9E61	4822 117 13605	Jumper 0402
9E62	4822 117 13605	Jumper 0402
9E63	4822 117 13605	Jumper 0402
9E64	4822 117 13605	Jumper 0402
9E65	4822 117 13605	Jumper 0402
9E66	4822 117 13605	Jumper 0402
9E67	4822 117 13605	Jumper 0402
9E68	4822 117 13605	Jumper 0402
9E69	4822 117 13605	Jumper 0402
9E70	4822 117 13605	Jumper 0402

9E71	4822 117 13605	Jumper 0402
9E72	4822 117 13605	Jumper 0402
9E73	4822 117 13605	Jumper 0402
9E74	4822 117 13605	Jumper 0402
9E75	4822 117 13605	Jumper 0402
9E76	4822 117 13605	Jumper 0402
9E77	4822 117 13605	Jumper 0402
9E78	4822 117 13605	Jumper 0402
9E79	4822 117 13605	Jumper 0402
9E80	4822 117 13605	Jumper 0402
9E87	4822 117 13605	Jumper 0402
9E88	4822 117 13605	Jumper 0402
9E90	4822 117 13605	Jumper 0402
9E92	4822 117 13605	Jumper 0402
9E94	4822 117 13605	Jumper 0402
9E96	4822 117 13605	Jumper 0402
9F02	4822 117 13605	Jumper 0402
9F03	4822 117 13605	Jumper 0402
9F09	4822 117 13605	Jumper 0402
9F14	4822 117 13605	Jumper 0402
9F17	4822 117 13605	Jumper 0402
9G06	4822 117 13605	Jumper 0402
9G07	4822 117 13605	Jumper 0402
9G21	4822 117 13605	Jumper 0402
9G23	4822 117 13605	Jumper 0402
9G25	4822 117 13605	Jumper 0402
9G27	4822 117 13605	Jumper 0402
9G29	4822 117 13605	Jumper 0402
9G31	4822 117 13605	Jumper 0402
9G33	4822 117 13605	Jumper 0402
9G35	4822 117 13605	Jumper 0402
9G37	4822 117 13605	Jumper 0402
9G39	4822 117 13605	Jumper 0402
9G41	4822 117 13605	Jumper 0402
9G43	4822 117 13605	Jumper 0402
9G45	4822 117 13605	Jumper 0402
9G47	4822 117 13605	Jumper 0402
9G51	4822 117 13605	Jumper 0402
9G54	4822 117 13605	Jumper 0402
9G56	4822 117 13605	Jumper 0402
9G58	4822 117 13605	Jumper 0402
9G60	4822 117 13605	Jumper 0402
9G62	4822 117 13605	Jumper 0402
9G64	4822 117 13605	Jumper 0402
9G66	4822 117 13605	Jumper 0402
9G68	4822 117 13605	Jumper 0402
9G70	4822 117 13605	Jumper 0402
9G71	4822 117 13605	Jumper 0402
9G72	4822 117 13605	Jumper 0402
9G73	4822 117 13605	Jumper 0402
9G74	3198 031 07590	75Ω 5% 0402
9G75	3198 031 07590	75Ω 5% 0402
9H01	4822 117 13605	Jumper 0402
9H02	4822 117 13605	Jumper 0402
9H03	4822 117 13605	Jumper 0402
9H05	4822 117 13605	Jumper 0402
9H06	4822 117 13605	Jumper 0402
9H07	4822 117 13605	Jumper 0402
9H08	4822 117 13605	Jumper 0402
9H09	4822 117 13605	Jumper 0402
9H10	4822 117 13605	Jumper 0402
9H11	4822 117 13605	Jumper 0402
9H12	4822 117 13605	Jumper 0402
9H13	4822 117 13605	Jumper 0402
9H14	4822 117 13605	Jumper 0402
9H15	4822 117 13605	Jumper 0402
9H16	4822 117 13605	Jumper 0402
9H20	4822 117 13605	Jumper 0402
9H21	4822 117 13605	Jumper 0402
9I37	4822 117 13605	Jumper 0402
9I41	4822 117 13605	Jumper 0402
9I42	4822 117 13605	Jumper 0402
9I88	4822 117 13605	Jumper 0402
9I91	4822 051 20008	Jumper 0805
9I92	4822 051 20008	Jumper 0805
9I94	4822 051 20008	Jumper 0805
9J00	4822 117 13605	Jumper 0402
9J01	4822 051 20008	Jumper 0805
9J02	4822 051 20008	Jumper 0805
9J10	4822 117 13605	Jumper 0402
9J12	4822 117 13605	Jumper 0402
9J13	4822 117 13605	Jumper 0402
9J67	4822 117 13605	Jumper 0402
9J68	4822 117 13605	Jumper 0402
9J75	4822 117 13605	Jumper 0402
9J77	4822 117 13605	Jumper 0402
9J78	4822 117 13605	Jumper 0402
9J79	4822 117 13605	Jumper 0402
9J80	4822 117 13605	Jumper 0402
9K02	4822 117 13605	Jumper 0402
9K03	4822 117 13605	Jumper 0402
9K10	4822 117 13605	Jumper 0402
9K11	4822 117 13605	Jumper 0402
9K12	4822 117 13605	Jumper 0402
9K13	4822 117 13605	Jumper 0402
9K14	4822 117 13605	Jumper 0402
9K15	4822 117 13605	Jumper 0402
9L11	4822 117 13605	Jumper 0402
9M02	4822 051 20008	Jumper 0805
9N00	4822 117 13605	Jumper 0402
9N02	4822 117 13605	Jumper 0402
9N05	4822 117 13605	Jumper 0402
9N64	4822 051 20008	Jumper 0805
9N65	4822 051 20008	Jumper 0805
9N69	4822 051 20008	Jumper 0805
9Q05	4822 117 13605	Jumper 0402
9Q06	4822 117 13605	Jumper 0402
9Q07	4822 117 13605	Jumper 0402
9Q08	4822 117 13605	Jumper 0402
9Q36	4822 117 13605	Jumper 0402
9Q37	4822 117 13605	Jumper 0402
9T01	4822 117 13605	Jumper 0402
9U01	4822 117 13605	Jumper 0402
9U02	4822 117 13605	Jumper 0402
9U03	4822 117 13605	Jumper 0402
9Y70	4822 117 13605	Jumper 0402
9Y71	4822 117 13605	Jumper 0402
9Y81	4822 117 13605	Jumper 0402
9Y82	4822 117 13605	Jumper 0402
9Y83	4822 117 13605	Jumper 0402
9Y84	4822 117 13605	Jumper 0402
9Y85	4822 117 13605	Jumper 0402

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5C01	2422 549 44197	Bead 220Ω at 100MHz
5C02	2422 549 44197	Bead 220Ω at 100MHz
5C03	2422 549 44197	Bead 220Ω at 100MHz
5C31	2422 549 44197	Bead 220Ω at 100MHz
5C32	2422 549 43769	Bead 30Ω at 100MHz
5C33	2422 549 44197	Bead 220Ω at 100MHz
5C34	2422 549 44197	Bead 220Ω at 100MHz
5C36	2422 549 44197	Bead 220Ω at 100MHz
5C52	2422 549 44197	Bead 220Ω at 100MHz
5C53	2422 549 44197	Bead 220Ω at 100MHz
5C54	2422 549 44197	Bead 220Ω at 100MHz
5C56	2422 549 44197	Bead 220Ω at 100MHz
5C57	4822 157 11892	0.22μH 10% 0805
5D11	2422 536 00671	10μH 20%
5D12	2422 549 44197	Bead 220Ω at 100MHz
5D13	2422 549 44197	Bead 220Ω at 100MHz
5D14	2422 536 00779	10μH 20%
5E07	2422 549 43062	Bead 600Ω at 100MHz
5E09	4822 157 11716	Bead 30Ω at 100MHz
5E10	4822 157 11716	Bead 30Ω at 100MHz
5E11	4822 157 11716	Bead 30Ω at 100MHz
5E12	4822 157 11716	Bead 30Ω at 100MHz
5E13	4822 157 11716	Bead 30Ω at 100MHz
5E14	4822 157 11716	Bead 30Ω at 100MHz
5E15	2422 535 94134	10μH 20% 0805
5G03	2422 549 42896	Bead 120Ω 100MHz
5G10	2422 549 44197	Bead 220Ω at 100MHz
5G11	2422 549 44197	Bead 220Ω at 100MHz
5G12	2422 549 44197	Bead 220Ω at 100MHz
5G50	2422 549 42896	Bead 120Ω 100MHz
5G51	2422 549 42896	Bead 120Ω 100MHz
5G52	2422 549 42896	Bead 120Ω 100MHz
5H01	2422 549 44768	Bead 90Ω at 100MHz
5H02	2422 549 44768	Bead 90Ω at 100MHz
5H03	2422 549 44197	Bead 220Ω at 100MHz
5H04	2422 549 44197	Bead 220Ω at 100MHz
5H05	3198 018 52280	2.2μF 10% 1008
5I00	2422 549 42896	Bead 120Ω 100MHz
5J51	2422 549 44197	Bead 220Ω at 100MHz
5J52	2422 549 44197	Bead 220Ω at 100MHz
5J53	2422 549 43769	Bead 30Ω at 100MHz
5J54	2422 549 43769	Bead 30Ω at 100MHz
5K00	2422 549 44197	Bead 220Ω at 100MHz
5K01	2422 549 44197	Bead 220Ω at 100MHz
5K02	2422 549 44197	Bead 220Ω at 100MHz
5K03	2422 549 44197	Bead 220Ω at 100MHz
5K04	2422 549 44197	Bead 220Ω at 100MHz
5K05	2422 549 44197	Bead 220Ω at 100MHz
5K06	2422 549 44197	Bead 220Ω at 100MHz
5M00	2422 549 44197	Bead 220Ω at 100MHz
5M01	2422 549 44197	Bead 220Ω at 100MHz
5M02	2422 549 44197	Bead 220Ω at 100MHz
5M03	2422 549 44197	Bead 220Ω at 100MHz
5M04	2422 549 44197	Bead 220Ω at 100MHz
5M05	3198 018 90050	Bead 1kΩ at 100MHz
5M06	2422 549 44197	Bead 220Ω at 100MHz
5M07	2422 549 44197	Bead 220Ω at 100MHz
5M08	2422 549 44197	Bead 220Ω at 100MHz
5M14	2422 549 42896	Bead 120Ω 100MHz
5M20	2422 549 44197	Bead 220Ω at 100MHz
5M21	2422 549 44197	Bead 220Ω at 100MHz
5M25	2422 549 44197	Bead 220Ω at 100MHz
5N01	2422 549 42896	Bead 120Ω 100MHz
5N10	2422 549 44197	Bead 220Ω at 100MHz
5Q01	2422 549 43769	Bead 30Ω at 100MHz
5Q02	2422 549 43769	Bead 30Ω at 100MHz
5Q03	2422 549 43769	Bead 30Ω at 100MHz
5Q04	2422 549 43769	Bead 30Ω at 100MHz
5Q05	3198 018 51080	1μH 10% 0603
5Q06	2422 549 44197	Bead 220Ω at 100MHz
5T01	2422 535 94134	10μH 20% 0805
5U01	2422 536 00779	10μH 20%
5U02	2422 536 00779	10μH 20%
5U03	2422 536 00779	10μH 20%
5U05	2422 536 00671	10μH 20%
5U06	2422 536 00671	10μH 20%
5U09	2422 549 44197	Bead 220Ω at 100MHz
5U12	2422 549 44197	Bead 220Ω at 100MHz
5U13	2422 549 44197	Bead 220Ω at 100MHz
5U14	2422 549 44197	Bead 220Ω at 100MHz
5U16	2422 549 44197	Bead 220Ω at 100MHz
5U17	2422 549 44197	Bead 220Ω at 100MHz
5U19	2422 549 44197	Bead 220Ω at 100MHz
5U20	2422 549 44197	Bead 220Ω at 100MHz
5U21	2422 536 00671	10μH 20%
5V00	2422 549 44197	Bead 220Ω at 100MHz

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6C52	9340 552 30115	BA591
6D02	4822 130 11397	BAS316
6D03	9322 159 70685	MM3Z9V1
6E08	9340 566 10115	BAV99S
6E09	4822 130 11397	BAS316
6E10	9340 553 52115	BAS321
6E11	9340 553 52115	BAS321
6E12	9340 553 52115	BAS321
6E13	9340 553 52115	BAS321
6E24	4822 130 11416	PDZ6.8B
6E26	4822 130 11416	PDZ6.8B
6E27	4822 130 11416	PDZ6.8B
6E28	4822 130 11416	PDZ6.8B
6E29	4822 130 11416	PDZ6.8B
6E30	4822 130 11416	PDZ6.8B
6E31	4822 130 11416	PDZ6.8B
6E32	4822 130 11416	PDZ6.8B
6E33	4822 130 11416	PDZ6.8B
6E36	4822 130 11416	PDZ6.8B
6E37	9340 548 61115	PDZ12B
6E38	4822 130 11416	PDZ6.8B
6E39	4822 130 11416	PDZ6.8B
6E41	4822 130 11416	PDZ6.8B
6E43	4822 130 11416	PDZ6.8B
6E44	4822 130 80622	BAT54
6E45	4822 130 80622	BAT54
6F01	4822 130 11397	BAS316
6F02	4822 130 11397	BAS316
6F04	4822 130 11397	BAS316
6F05	4822 130 11397	BAS316
6F06	4822 130 11397	BAS316
6F07	9322 165 17668	STPS2L30A
6G01	3198 020 55680	BZX384-C5V6
6G06	9322 211 74685	SML-010MTL
6G11	9322 211 74685	SML-010MTL
6H00	9322 211 74685	SML-010MTL
6H01	4822 130 11397	BAS316
6H03	4822 130 11397	BAS316
6H04	9340 566 10115	BAV99S
6H05	9340 566 10115	BAV99S
6H06	9340 566 10115	BAV99S
6I00	4822 130 11416	PDZ6.8B
6I01	4822 130 11416	PDZ6.8B
6I02	4822 130 11416	PDZ6.8B
6I03	4822 130 11416	PDZ6.8B
6I04	4822 130 11416	PDZ6.8B
6I05	4822 130 11416	PDZ6.8B
6I08	4822 130 11416	PDZ6.8B
6I09	4822 130 11416	PDZ6.8B
6I10	4822 130 11416	PDZ6.8B
6I11	4822 130 11416	PDZ6.8B
6I12	4822 130 11416	PDZ6.8B
6I24	4822 130 11416	PDZ6.8B
6I32	4822 130 11416	PDZ6.8B
6I34	4822 130 11416	PDZ6.8B
6I36	4822 130 11416	PDZ6.8B
6I38	4822 130 11416	PDZ6.8B
6M01	9340 566 10115	BAV99S
6N01	4822 130 80622	BAT54
6N03	4822 130 80622	BAT54
6N04	9340 566 10115	BAV99S
6N05	9340 566 10115	BAV99S
6N06	9340 566 10115	BAV99S
6T01	9322 201 26685	SML4752
6T02	4822 130 11397	BAS316
6T03	4822 130 11397	BAS316

6T06	9322 211 74685	SML-010MTL
6T07	9322 211 74685	SML-010MTL
6T08	4822 130 10838	UDZ3.3B
6U01	4822 130 11397	BAS316
6U02	4822 130 11397	BAS316
6U03	4822 130 11397	BAS316
6U05	9322 165 17668	STPS2L30A
6U06	9322 165 17668	STPS2L30A
6U07	9322 165 17668	STPS2L30A
6U11	9340 548 61115	PDZ12B
6U12	9340 548 61115	PDZ12B
6U14	4822 130 11397	BAS316
6U15	4822 130 11397	BAS316
6U16	4822 130 11397	BAS316
6U17	4822 130 10838	UDZ3.3B
6U18	4822 130 10328	BAV99W
6U19	9322 211 74685	SML-010MTL
6U20	9322 211 74685	SML-010MTL
6U21	9322 211 74685	SML-010MTL
6U22	9322 211 74685	SML-010MTL

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7C00	9352 740 21557	PNX3000HL/N2
7C31	9340 425 20115	BC847BS
7C32	9322 167 69668	LD1117ADT18
7C54	3198 010 42310	BC847BW
7C55	3198 010 42310	BC847BW
7C60	9340 425 30115	BC847BPN
7C61	3198 010 42310	BC847BW
7D04	9322 182 77668	L6910
7D05	9322 160 70668	SI4936ADY
7D06	9340 425 20115	BC847BS
7D08	9340 425 30115	BC847BPN
7D09	9340 425 30115	BC847BPN
7D10	3198 010 42310	BC847BW
7E01	9340 425 30115	BC847BPN
7E03	3198 010 44350	BC807-25W
7E05	9340 425 30115	BC847BPN
7E06	3198 010 44350	BC807-25W
7E08	9340 425 30115	BC847BPN
7E09	5322 130 60159	BC846B
7E10	9340 219 30115	BC817-25W
7E11	9340 219 30115	BC817-25W
7E30		For SW see item 0603
7E31	9965 000 04199	BSN20
7E32	9965 000 04199	BSN20
7E33	9322 199 35671	SII9993CTG100
7E34	9965 000 04199	BSN20
7E35	9965 000 04199	BSN20
7F01	9322 204 63685	NCP303LSN10
7F02	9322 204 63685	NCP303LSN10
7F03	9322 204 63685	NCP303LSN10
7F05	9322 204 63685	NCP303LSN10
7F06	9322 204 63685	NCP303LSN10
7F07	9352 686 35118	PCA9515DP
7F08	9322 204 63685	NCP303LSN10
7F09	9322 204 63685	NCP303LSN10
7F11	9322 206 22668	M24C64-WDW6P
7F13	3198 010 44310	PDTC114EU
7F14	9351 875 10118	74HCT4066PW
7F15		For SW see item 0601
7F16	3198 010 44310	PDTC114EU
7F17	3198 010 42310	BC847BW
7G06	9322 204 10685	SI3441BDV
7G07	3198 010 42310	BC847BW
7G08	3198 010 42310	BC847BW
7G50	9322 159 45668	DS90C385MTD
7I12	9340 425 20115	BC847BS
7I55	9352 691 94118	PCA9554PW
7I71	9340 425 20115	BC847BS
7I80	3198 010 42310	BC847BW
7I87	9340 425 20115	BC847BS
7I94	9351 875 80118	74HCU04PW
7J00	9322 201 63668	TS924IP
7J02	9322 187 67668	TS482IS
7J50	9322 204 76671	T6TU5XBG-0001
7J51	9322 206 19672	MSM56V16160F-7T3-FG
7J53	9322 170 14668	LF15ABDT
7K80	9352 754 48557	PNX2000HL/M1
7M01	9340 425 30115	BC847BPN
7M02	3198 010 42310	BC847BW
7M03	3198 010 42310	BC847BW
7M04	3198 010 42310	BC847BW
7N01	9340 425 30115	BC847BPN
7N19	3198 010 44310	PDTC114EU
7N50	9352 115 40118	74LVC245APW
7N51	9352 115 40118	74LVC245APW
7N52	9352 115 40118	74LVC245APW
7N53		For SW see item 0605
7N55	9340 425 30115	BC847BPN
7N56	9340 425 30115	BC847BPN
7N60	9340 425 30115	BC847BPN
7N61	9340 425 10115	BC857BS
7N70	9322 198 09685	LD2981CU33
7N71	9322 198 10685	LD2981CU50
7N72	9322 198 11685	L78L08ACU
7Q01	9322 204 86668	LM3526M-LNOPB
7T02	9322 104 47668	L78M05CDT
7T03	3198 010 42310	BC847BW
7T04	3198 010 42310	BC847BW
7T10	9352 686 35118	PCA9515DP
7U01	9322 160 70668	SI4936ADY
7U02	9322 160 70668	SI4936ADY
7U03	9322 160 70668	SI4936ADY
7U04	9322 182 77668	L6910
7U05	9322 182 77668	L6910
7U06	9322 182 77668	L6910
7U08	9340 425 20115	BC847BS
7U09	9340 425 20115	BC847BS
7U10	9340 425 20115	BC847BS
7U14	9340 425 20115	BC847BS
7U15	9322 204 71668	SI4835BDY
7U17	4822 209 16406	TL431ACD
7U19	5322 130 60159	BC846B
7U20	9340 425 30115	BC847BPN
7U21	3198 010 42310	BC847BW
7V00	9352 760 31557	PNX8550EH/M1
7V01	9322 204 22671	K4D551638D-LC40
7V02	9322 204 22671	K4D551638D-LC40

External I/O [BE]

Various

1O01	2422 025 18256	Socket 21p f Bk
1O02	2422 025 18256	Socket 21p f Bk
1O35	2422 025 17601	Connector 40p f

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2O02	3198 017 32240	220nF 20% 10V 0603
2O03	2020 552 96448	1μF 10% 16V 0805
2O04	2020 552 96448	1μF 10% 16V 0805
2O05	2020 552 96448	1μF 10% 16V 0805
2O06	3198 016 31010	100pF 10% 50V 0603
2O07	3198 032 34130	10μF 20% 10V
2O08	3198 032 34130	10μF 20% 10V
2O09	3198 017 31040	100nF 20% 50V 0603
2O11	3198 032 34130	10μF 20% 10V
2O12	3198 017 31040	100nF 20% 50V 0603
2O13	2020 552 96448	1μF 10% 16V 0805
2O14	3198 017 31040	100nF 20% 50V 0603
2O15	3198 017 31040	100nF 20% 50V 0603
2O16	3198 016 31010	100pF 10% 50V 0603
2O17	3198 017 31040	100nF 20% 50V 0603
2O18	3198 016 33310	330pF 1% 50V 0603
2O19	2020 552 96448	1μF 10% 16V 0805
2O20	2020 552 96448	1μF 10% 16V 0805
2O21	2020 552 96448	1μF 10% 16V 0805
2O22	2020 552 96448	1μF 10% 16V 0805
2O23	3198 017 31040	100nF 20% 50V 0603
2O24	3198 030 41010	100μF 20% 16V
2O25	3198 017 01040	100nF 10% 16V 0805
2O26	2020 552 96448	1μF 10% 16V 0805
2O29	3198 016 31010	100pF 10% 50V 0603
2O30	3198 016 31010	100pF 10% 50V 0603
2O31	3198 016 31010	100pF 10% 50V 0603
2O32	3198 016 31010	100pF 10% 50V 0603
2O33	3198 016 33310	330pF 1% 50V 0603
2O35	3198 017 31040	100nF 20% 50V 0603
2O36	3198 017 31040	100nF 20% 50V 0603
2O37	3198 017 31040	100nF 20% 50V 0603
2O44	3198 030 41090	10μF 20% 16V
2O46	3198 030 41090	10μF 20% 16V
2O52	3198 032 35150	10μF 20% 10V
2O53	3198 017 31040	100nF 20% 50V 0603
2O58	3198 017 31040	100nF 20% 50V 0603
2O59	3198 032 34130	10μF 20% 10V

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3I01	3198 021 31010	100Ω 5% 0.062W 0603
3I02	3198 021 31020	1kΩ 5% 0.062W 0603
3O02	3198 021 35610	560Ω 5% 0.062W 0603
3O03	3198 021 33310	330Ω 5% 0.062W 0603
3O04	3198 021 32230	22kΩ 5% 0603
3O05	3198 021 32230	22kΩ 5% 0603
3O06	3198 021 36890	68Ω 5% 0.062W 0603
3O07	3198 021 31020	1kΩ 5% 0.062W 0603
3O08	3198 021 34720	4.7kΩ 5% 0603
3O09	3198 021 32230	22kΩ 5% 0603
3O10	3198 021 32230	22kΩ 5% 0603
3O11	3198 021 31020	1kΩ 5% 0.062W 0603
3O13	3198 021 34730	47kΩ 5% 0603
3O14	3198 021 31020	1kΩ 5% 0.062W 0603
3O16	3198 021 38220	8.2kΩ 5% 0.062W 0603
3O17	3198 021 33320	3.3kΩ 5% 0.062W 0603
3O18	3198 021 31040	100kΩ 5% 0.062W 0603
3O19	3198 021 31020	1kΩ 5% 0.062W 0603
3O20	3198 021 34730	47kΩ 5% 0603
3O21	3198 021 31040	100kΩ 5% 0.062W 0603
3O22	3198 021 31040	100kΩ 5% 0.062W 0603
3O23	3198 021 31020	1kΩ 5% 0.062W 0603
3O24	3198 021 31040	100kΩ 5% 0.062W 0603
3O25	3198 021 32230	22kΩ 5% 0603
3O26	3198 021 31010	100Ω 5% 0.062W 0603
3O27	3198 021 31040	100kΩ 5% 0.062W 0603
3O29	3198 021 32230	22kΩ 5% 0603
3O31	3198 021 38220	8.2kΩ 5% 0.062W 0603
3O32	3198 021 33320	3.3kΩ 5% 0.062W 0603
3O33	3198 021 32230	22kΩ 5% 0603
3O34	3198 021 31040	100kΩ 5% 0.062W 0603
3O37	3198 021 36810	680Ω 5% 0.062W 0603
3O40	3198 021 31010	100Ω 5% 0.062W 0603
3O44	3198 021 31010	100Ω 5% 0.062W 0603
3O45	3198 021 31010	100Ω 5% 0.062W 0603
3O46	3198 021 31010	100Ω 5% 0.062W 0603
3O47	3198 021 31010	100Ω 5% 0.062W 0603
3O49	2322 750 61008	1Ω 5% 1206 Fuse
3O51	2322 702 60759	75Ω 5% 0603
3O52	3198 021 36890	68Ω 5% 0.062W 0603
3O55	2322 702 60759	75Ω 5% 0603
3O59	2322 702 60759	75Ω 5% 0603
3O60	3198 021 31020	1kΩ 5% 0.062W 0603
3O61	2322 702 60759	75Ω 5% 0603
3O62	2322 702 60759	75Ω 5% 0603
3O63	3198 021 31010	100Ω 5% 0.062W 0603
3O64	3198 021 31010	100Ω 5% 0.062W 0603
3O66	3198 021 31010	100Ω 5% 0.062W 0603
3O67	3198 021 90030	Jumper 0603
3O69	3198 021 31010	100Ω 5% 0.062W 0603
3O70	3198 021 31010	100Ω 5% 0.062W 0603
3O71	3198 021 31010	100Ω 5% 0.062W 0603
3O72	3198 021 31010	100Ω 5% 0.062W 0603
3O74	3198 021 31010	100Ω 5% 0.062W 0603
3O75	3198 021 31020	1kΩ 5% 0.062W 0603
3O76	3198 021 31010	100Ω 5% 0.062W 0603
3O77	3198 021 31020	1kΩ 5% 0.062W 0603
3O78	3198 021 31010	100Ω 5% 0.062W 0603
3O79	3198 021 31020	1kΩ 5% 0.062W 0603
3O81	3198 021 31020	1kΩ 5% 0.062W 0603
3O82	3198 021 31510	150Ω 5% 0.062W 0603
3O83	3198 021 31020	1kΩ 5% 0.062W 0603
3O97	3198 021 31510	150Ω 5% 0.062W 0603
9O00	3198 021 90030	Jumper 0603
9O01	3198 021 90030	Jumper 0603
9O15	3198 021 90030	Jumper 0603
9O40	3198 021 90030	Jumper 0603

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5O00	3198 018 90060	Bead 30Ω at 100MHz

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6O02	3198 020 51290	BZX384-C12
6O04	9340 548 55115	PDZ6.8B
6O05	3198 010 10630	BAS316
6O06	3198 010 10630	BAS316
6O07	9340 548 55115	PDZ6.8B
6O08	9340 548 55115	PDZ6.8B
6O09	9340 548 55115	PDZ6.8B
6O10	9340 548 55115	PDZ6.8B
6O12	9340 548 55115	PDZ6.8B
6O14	9340 548 55115	PDZ6.8B
6O15	9340 548 55115	PDZ6.8B
6O16	9340 548 55115	PDZ6.8B
6O17	9340 548 55115	PDZ6.8B
6O18	3198 010 10630	BAS316
6O19	9340 548 55115	PDZ6.8B
6O21	9340 548 55115	PDZ6.8B
6O22	3198 020 51290	BZX384-C12
6O24	9340 548 55115	PDZ6.8B
6O30	9340 548 55115	PDZ6.8B
6O31	9340 548 55115	PDZ6.8B
6O32	9340 548 55115	PDZ6.8B
6O33	9340 548 55115	PDZ6.8B
6O34	9340 548 55115	PDZ6.8B
6O35	9340 548 55115	PDZ6.8B
6O36	9340 548 55115	PDZ6.8B
6O37	9340 548 55115	PDZ6.8B
6O38	3198 020 52780	BZX384-C2V7

7000	9351 869 40118	74HC4053PW
7001	3198 010 42030	BC847B
7002	3198 010 42030	BC847B
7003	3198 010 42030	BC847B
7004	3198 010 42030	BC847B
7005	3198 010 42030	BC847B
7006	3198 010 42030	BC847B
7007	3198 010 42030	BC847B
7010	9351 869 40118	74HC4053PW
7012	3198 010 42030	BC847B
7015	3198 010 42030	BC847B
7024	3198 010 42030	BC847B
7025	3198 010 42030	BC847B

Side I/O Assy [D]

Various

1001	2422 026 05133	Connector SVHS 4p f
1002	4822 267 10975	Soc. CINCH f YeWhRd
1005	2422 033 00486	Soc. USB 4p F
1010	4822 267 31014	Soc. headphone
1050	2422 549 44768	Bead 90Ω at 100MHz
1H01	2422 033 00486	Soc. USB 4p F
1M36	2422 025 17179	Connector 11p m

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2003	2022 552 05679	1µF 10% 16V 0805
2004	3198 016 36810	680pF 25V 0603
2005	2020 552 94427	100pF 5% 50V
2006	3198 016 36810	680pF 25V 0603
2007	2020 552 94427	100pF 5% 50V
2008	2238 916 15641	22nF 10% 25V 0603
2009	5322 126 11583	10nF 10% 50V 0603
2010	2238 916 15641	22nF 10% 25V 0603
2011	5322 126 11583	10nF 10% 50V 0603

-WW-

3000	4822 051 30759	75Ω 5% 0.062W
3004	4822 051 30759	75Ω 5% 0.062W
3008	4822 051 30222	2.2kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	4822 051 30333	33kΩ 5% 0.062W
3011	4822 051 30392	3.9Ω 5% 0.063W 0603
3012	4822 051 30102	1kΩ 5% 0.062W
3013	4822 051 30333	33kΩ 5% 0.062W
3016	4822 051 30103	10kΩ 5% 0.062W
3020	4822 051 30103	10kΩ 5% 0.062W
9004	4822 051 30008	Jumper 0603
9005	4822 051 30008	Jumper 0603
9006	4822 051 30008	Jumper 0603
9007	4822 051 30008	Jumper 0603
9008	4822 051 30008	Jumper 0603
9009	4822 051 30008	Jumper 0603
9010	4822 051 30008	Jumper 0603
9011	4822 051 30008	Jumper 0603

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5000	2422 549 44197	Bead 220Ω at 100MHz

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6000	4822 130 11416	PDZ6.8B
6001	4822 130 11416	PDZ6.8B
6002	4822 130 11416	PDZ6.8B
6003	4822 130 11416	PDZ6.8B
6004	4822 130 11416	PDZ6.8B
6005	4822 130 11416	PDZ6.8B
6006	4822 130 11416	PDZ6.8B
6007	4822 130 11416	PDZ6.8B
6008	4822 130 11416	PDZ6.8B
6009	4822 130 11416	PDZ6.8B
6010	4822 130 11416	PDZ6.8B
6011	4822 130 11416	PDZ6.8B

Top control Assy [E]

Various

0345	2422 025 16544	Connector 6p m
1701	4822 276 13775	Switch 1p 0.1A 12V
1702	4822 276 13775	Switch 1p 0.1A 12V
1703	4822 276 13775	Switch 1p 0.1A 12V
1704	4822 276 13775	Switch 1p 0.1A 12V
1705	4822 276 13775	Switch 1p 0.1A 12V
1710	4822 276 14007	Switch 2p 0.1A 12V
8345	3104 311 08141	Cable 6P/480/6P

-WW-

3008	4822 117 10845	620Ω 1% 0.1W
3010	4822 117 11534	1.1kΩ 1% 0.1W
3011	4822 117 11951	2kΩ 1% 0.1W
3013	4822 117 13528	200Ω 1% 0.125W 0805
3014	3198 031 03910	390Ω 1% 0402
3017	4822 051 30339	33Ω 5% 0.062W
3018	4822 051 30339	33Ω 5% 0.062W
3019	4822 051 30339	33Ω 5% 0.062W
3020	4822 051 30339	33Ω 5% 0.062W
3021	4822 051 30339	33Ω 5% 0.062W
3022	4822 051 30339	33Ω 5% 0.062W
3023	4822 051 30339	33Ω 5% 0.062W
3024	4822 051 30339	33Ω 5% 0.062W
3025	4822 051 30339	33Ω 5% 0.062W
3026	4822 051 30339	33Ω 5% 0.062W
3027	4822 051 30339	33Ω 5% 0.062W
3028	4822 051 30339	33Ω 5% 0.062W
3999	4822 117 13602	2.2kΩ 5% 0.01W 0402
9000	4822 117 13605	Jumper 0402

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6001	9322 198 19685	SML512BC2T
6002	9322 198 19685	SML512BC2T
6003	9322 198 19685	SML512BC2T
6004	9322 198 19685	SML512BC2T
6005	9322 198 19685	SML512BC2T
6006	9322 198 19685	SML512BC2T
6007	9322 198 19685	SML512BC2T
6008	9322 198 19685	SML512BC2T
6009	9322 198 19685	SML512BC2T
6010	9322 198 19685	SML512BC2T
6011	9322 198 19685	SML512BC2T
6012	9322 198 19685	SML512BC2T

LED + Switch Assy [J]

Various

0345	2422 025 16961	Connector 6p m SMD
1040	9322 206 81667	TSOP34836YA1
1M01	2422 025 17103	Connector 3p m SMD
1M20	2422 025 17441	Connector 12p m

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2030	4822 124 23002	10µF 16V
2040	4822 124 12095	100µF 20% 16V
2060	5322 124 41945	22µF 20% 35V
2070	4822 126 14583	470nF 10% 16V 0805
2071	4822 124 23002	10µF 16V

-WW-

3030	3198 031 04720	4.7kΩ 5% 0402
3031	4822 117 12889	270kΩ 1% 0.063W 0603
3032	2322 705 70184	180Ω 5% 0402
3033	4822 051 30102	1kΩ 5% 0.062W
3034	4822 117 13548	1kΩ 5% 0402
3035	3198 031 04720	4.7kΩ 5% 0402
3036	3198 031 02280	2.2Ω 5% 0.1W 0402
3037	3198 031 02280	2.2Ω 5% 0.1W 0402
3040	4822 117 13597	330Ω 5% 0402 0.01W
3041	4822 117 13606	10kΩ 5% 0.01W 0402
3042	3198 031 06820	6.8kΩ 5% 0.01W 0402
3051	4822 117 13597	330Ω 5% 0402 0.01W
3060	4822 117 13606	10kΩ 5% 0.01W 0402
3061	4822 051 30331	330Ω 5% 0.062W
3062	4822 117 11373	100Ω 1% 0805
3063	4822 117 13606	10kΩ 5% 0.01W 0402
3064	4822 117 11373	100Ω 1% 0805
3070	2322 705 70475	4.7MΩ 5% 0402
3071	2322 705 70475	4.7MΩ 5% 0402
3072	4822 117 13548	1kΩ 5% 0402
3073	3198 031 03320	3.3kΩ 5% 0402
3074	4822 117 13606	10kΩ 5% 0.01W 0402
3075	3198 031 04720	4.7kΩ 5% 0402
3078	3198 031 03320	3.3kΩ 5% 0402
3079	3198 031 03320	3.3kΩ 5% 0402
9010	4822 117 13605	Jumper 0402
9013	4822 117 13605	Jumper 0402
9019	4822 117 13605	Jumper 0402
9022	4822 051 30008	Jumper 0603
9024	4822 051 30008	Jumper 0603
9026	4822 117 13605	Jumper 0402
9027	4822 117 13605	Jumper 0402
9040	4822 117 13605	Jumper 0402
9043	4822 117 13605	Jumper 0402

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6030	4822 130 11397	BAS316
6031	4822 130 11397	BAS316
6051	4822 130 83915	TLMV3100
6060	9322 198 19685	SML512BC2T
6061	4822 130 11397	BAS316
6070	9322 140 63685	TEMD5000

7030	3198 010 42320	BC857BW
7031	5322 130 62804	BCP53
7032	3198 010 42310	BC847BW
7060	3198 010 42310	BC847BW
7061	3198 010 42310	BC847BW
7070	9322 192 63668	LM358P

LCD Standby / Audio [SA]

Various

1304	2422 025 10647	Connector 4p m
1305	4822 267 10735	Connector 3p
1306	2422 025 16374	Connector 2p m
1307	2422 025 10647	Connector 4p m
1309	2422 025 11143	Connector 3p m
1316	2422 025 10772	Connector 12p m
1317	2422 025 10772	Connector 12p m
1318	2422 025 08149	Connector 6p m
1735	4822 267 10918	Connector 3p
1736	2422 025 10768	Connector 3p m
1739	2422 025 10769	Connector 9p m
1M02	2422 025 11244	Connector 7p m
1M10	2422 025 09406	Connector 4p m

⊣⊢

2101▲	4822 121 51598	2.2nF 5% 400V
2102	4822 124 40207	100µF 20% 25V
2103	2020 552 94427	100pF 5% 50V
2105	2020 552 94427	100pF 5% 50V
2107▲	2020 024 90718	10µF 20% 450V
2108▲	2020 024 90718	10µF 20% 450V
2109	2022 552 05679	1µF 10% 16V 0805
2110	2022 552 05679	1µF 10% 16V 0805
2111	4822 121 43526	47nF 5% 250V
2112	5322 126 11583	10nF 10% 50V 0603
2123	2238 586 59812	100nF 20% 50V 0603
2124	4822 124 40248	10µF 20% 63V
2129	5322 126 11578	1nF 10% 50V 0603
2131	2238 586 15641	22nF 10% 50V 0603
2132	4822 124 40207	100µF 20% 25V
2140	4822 124 40248	10µF 20% 63V
2141	4822 126 14583	470nF 10% 16V 0805
2144	2022 552 05679	1µF 10% 16V 0805
2145	4822 126 13881	470pF 5% 50V
2149	2022 552 05679	1µF 10% 16V 0805
2150	4822 124 12379	220µF 25V
2152	4822 121 70162	10nF 5% 400V
2153	5322 126 11582	6.8nF 10% 63V
2154	3198 017 31530	15nF 20% 50V 0603
2160	4822 124 21913	1µF 20% 63V
2163	4822 124 40207	100µF 20% 25V
2506▲	2252 811 95017	470pF 10% 250V
2507	4822 126 13682	100pF 5% 1kV
2508	4822 124 40764	22µF 100V
2510	2020 021 91668	2200µF 20% 10V
2511	4822 124 12379	220µF 25V
2513▲	4822 126 10206	2.2nF 10% 500V
2515	4822 126 14238	2.2nF 50V 0603
2533	4822 124 40207	100µF 20% 25V
2534	2022 552 05679	1µF 10% 16V 0805
2535	5322 126 11583	10nF 10% 50V 0603
2536	5322 126 11583	10nF 10% 50V 0603
2537	4822 126 14238	2.2nF 50V 0603
2538	5322 126 11583	10nF 10% 50V 0603
2539	2022 552 05679	1µF 10% 16V 0805
2540	5322 126 11583	10nF 10% 50V 0603
2544	5322 126 11583	10nF 10% 50V 0603
2702	5322 126 11578	1nF 10% 50V 0603
2704	5322 126 11578	1nF 10% 50V 0603
2705	2020 552 96684	470nF 10% 25V 0805
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2706	2222 580 15649	100nF 10% 50V 0805
2707	4822 126 14585	100nF 10% 0805 50V
2708	2020 552 96326	220nF 10% 16V
2709	4822 126 13881	470pF 5% 50V
2710	4822 126 13881	470pF 5% 50V
2711	5322 126 11578	1nF 10% 50V 0603
2712	2020 552 96683	220nF 10% 50V
2713	2020 552 96684	470nF 10% 25V 0805
2714	3198 017 33330	33nF 20% 16V 0603
2715	5322 126 11578	1nF 10% 50V 0603
2716	4822 126 14241	330pF 0603 50V
2717	5322 121 42498	680nF 5% 63V
2718	4822 122 33761	22pF 5% 50V
2719	5322 126 11578	1nF 10% 50V 0603
2720	2020 552 96326	220nF 10% 16V
2721	4822 126 13881	470pF 5% 50V
2722	4822 126 13881	470pF 5% 50V
2725	2020 552 94427	100pF 5% 50V
2726	3198 017 33330	33nF 20% 16V 0603
2727	5322 126 11578	1nF 10% 50V 0603
2728	4822 126 14241	330pF 0603 50V
2729	5322 121 42498	680nF 5% 63V
2764	4822 126 14491	2.2µF 10V 0805
2766	4822 126 14491	2.2µF 10V 0805
2768	4822 124 40255	100µF 20% 63V
2769	4822 124 40255	100µF 20% 63V
2777	2020 552 96683	220nF 10% 50V
2778	4822 124 40769	4.7µF 20% 100V
2779	2020 552 96683	220nF 10% 50V
2780	2020 552 96683	220nF 10% 50V
2781	2020 552 96683	220nF 10% 50V
2783	4822 124 41751	47µF 20% 50V
2786	2238 586 15641	22nF 10% 50V 0603
2788	4822 124 40255	100µF 20% 63V
2789	2020 552 96683	220nF 10% 50V
2790	4822 124 40255	100µF 20% 63V

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3100	4822 051 30101	100Ω 5% 0.062W
3101	4822 053 20475	4.7MΩ 5% 0.25W
3102	2312 915 11002	1kΩ 1% 0.5W
3103	2312 915 11002	1kΩ 1% 0.5W
3104	4822 051 30479	47Ω 5% 0.062W
3105	4822 051 30221	220Ω 5% 0.062W
3106	4822 051 30391	390Ω 5% 0.062W
3107	4822 051 30391	390Ω 5% 0.062W
3108	4822 053 10478	4.7Ω 5% 1W
3109	4822 051 30391	390Ω 5% 0.062W
3110	4822 051 30391	390Ω 5% 0.062W
3111▲	4822 053 10152	1.5kΩ 5% 1W
3112	4822 051 30391	390Ω 5% 0.062W
3113	4822 117 12139	22Ω 5% 0.062W
3114	4822 051 30221	220Ω 5% 0.062W
3117	4822 051 30479	47Ω 5% 0.062W
3122	4822 051 30471	47Ω 5% 0.062W
3123	4822 051 30109	10Ω 5% 0.062W
3124	4822 051 30339	33Ω 5% 0.062W
3125	4822 117 12971	15Ω 5% 0603 0.62W
3126	4822 051 30103	10kΩ 5% 0.062W
3127	4822 051 30562	5.6kΩ 5% 0.063W 0603
3128	4822 117 13608	4.7Ω 5% 0603 0.62W
3132	4822 051 30333	33kΩ 5% 0.062W
3134	4822 051 30102	1kΩ 5% 0.062W
3135	4822 051 30331	330Ω 5% 0.062W
3138	4822 051 30105	1MΩ 5% 0.062W
3140	4822 051 30223	22kΩ 5% 0.062W
3141	4822 051 30471	47Ω 5% 0.062W
3142	4822 051 30123	12kΩ 5% 0.1W
3145	4822 051 30472	4.7Ω 5% 0.062W
3146	4822 051 30479	47Ω 5% 0.062W
3147	4822 051 30223	22kΩ 5% 0.062W
3148	4822 051 30479	47Ω 5% 0.062W
3149	4822 051 30103	10kΩ 5% 0.062W
3150	4822 051 30101	100Ω 5% 0.062W
3152	4822 051 30102	1kΩ 5% 0.062W
3153	4822 051 30223	22kΩ 5% 0.062W
3155	4822 050 21003	10kΩ 1% 0.6W
3156	4822 051 30102	1kΩ 5% 0.062W
3157	4822 051 30223	22kΩ 5% 0.062W
3158	4822 051 30479	47Ω 5% 0.062W
3159	4822 051 30479	47Ω 5% 0.062W
3160	4822 051 30102	1kΩ 5% 0.062W
3161	4822 051 30123	12kΩ 5% 0.1W
3171	4822 051 30101	100Ω 5% 0.062W
3172	4822 051 30333	33kΩ 5% 0.062W
3175	4822 051 30103	10kΩ 5% 0.062W
3176	4822 051 30103	10kΩ 5% 0.062W
3509	4822 053 10222	2.2kΩ 5% 1W
3511	4822 051 30683	68kΩ 5% 0.062W
3512	4822 051 30471	47Ω 5% 0.062W
3513	4822 051 30333	33kΩ 5% 0.062W
3515	4822 117 13632	100kΩ 1% 0603 0.62W
3516	4822 051 30472	4.7Ω 5% 0.062W
3517	4822 051 30223	22kΩ 5% 0.062W
3528	4822 051 30472	4.7Ω 5% 0.062W
3529	4822 051 30101	100Ω 5% 0.062W
3530	4822 051 30223	22kΩ 5% 0.062W
3531	4822 051 30153	15kΩ 5% 0.062W
3532	4822 051 30472	4.7Ω 5% 0.062W
3533	4822 051 30152	1.5Ω 5% 0.062W
3534	4822 051 30103	10kΩ 5% 0.062W
3538	4822 051 30101	100Ω 5% 0.062W
3539	4822 051 30471	47Ω 5% 0.062W
3540	4822 051 30222	2.2kΩ 5% 0.062W
3541	4822 051 30222	2.2kΩ 5% 0.062W
3542	4822 051 30103	10kΩ 5% 0.062W
3544	4822 051 30221	220Ω 5% 0.062W
3560	4822 051 30682	6.8Ω 5% 0.062W
3561	4822 051 30392	3.9Ω 5% 0.063W 0603
3562	4822 117 13608	4.7Ω 5% 0603 0.62W
3701	4822 051 30103	10kΩ 5% 0.062W
3702	4822 051 30682	6.8Ω 5% 0.062W
3703	4822 051 30333	33kΩ 5% 0.062W
3704	4822 117 10833	10kΩ 1% 0.1W
3705	4822 051 20828	8.2Ω 5% 0.1W
3706	4822 051 30472	4.7Ω 5% 0.062W
3707	4822 051 30683	68kΩ 5% 0.062W
3708	4822 051 30563	56kΩ 5% 0.062W
3709	4822 117 11503	220Ω 1% 0.1W
3710	4822 051 30223	22kΩ 5% 0.062W
3711	4822 050 21204	120kΩ 1% 0,6W
3712	4822 051 30103	10kΩ 5% 0.062W
3713	2312 915 11202	1.2kΩ 1% 0.5W
3714	4822 117 12925	47kΩ 1% 0.063W 0603
3715	4822 117 12925	47kΩ 1% 0.063W 0603
3716	4822 117 12925	47kΩ 1% 0.063W 0603
3717	4822 117 13632	100kΩ 1% 0603 0.62W
3718	4822 117 13632	100kΩ 1% 0603 0.62W
3721	4822 051 30472	4.7Ω 5% 0.062W
3722	4822 051 30683	68kΩ 5% 0.062W
3723	4822 051 30563	56kΩ 5% 0.062W
3724	4822 117 11503	220Ω 1% 0.1W
3725	4822 051 30223	22kΩ 5% 0.062W
3726	4822 117 11503	220Ω 1% 0.1W
3727	4822 117 11503	220Ω 1% 0.1W
3743	4822 117 11449	2.2kΩ 5% 0.1W 0805
3746	4822 051 30223	22kΩ 5% 0.062W
3747	4822 050 24703	47kΩ 1% 0.6W
3748	4822 051 30471	47Ω 5% 0.062W
3750	4822 117 11449	2.2kΩ 5% 0.1W 0805
3756	4822 117 11449	2.2kΩ 5% 0.1W 0805
3757	4822 117 11449	2.2kΩ 5% 0.1W 0805
3759	4822 051 30332	3.3Ω 5% 0.062W
3760	4822 051 30332	3.3Ω 5% 0.062W
3761	4822 051 20109	10Ω 5% 0.1W
3762	4822 051 30222	2.2kΩ 5% 0.062W
3763	4822 051 30222	2.2kΩ 5% 0.062W
3764	4822 051 20109	10Ω 5% 0.1W
3765	4822 051 30103	10kΩ 5% 0.062W
3766	4822 117 13632	100kΩ 1% 0603 0.62W
3767	4822 117 13632	100kΩ 1% 0603 0.62W
3768	4822 117 13632	100kΩ 1% 0603 0.62W
3790	4822 051 30272	2.7kΩ 5% 0.062W
3791	4822 051 30272	2.7kΩ 5% 0.062W
3792	4822 051 30183	18kΩ 5% 0.062W
3793	4822 051 30183	18kΩ 5% 0.062W
3798	4822 051 30153	15kΩ 5% 0.062W
3999	4822 051 30222	2.2kΩ 5% 0.062W
9008	4822 051 30008	Jumper 0603
9010	3198 036 90010	Wire 0.58mm
9011	3198 036 90010	Wire 0.58mm
9020	4822 051 30008	Jumper 0603
9110	4822 051 30008	Jumper 0603
9717	4822 051 30008	Jumper 0603
9737	4822 051 30008	Jumper 0603

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5102	4822 526 10704	Bead 50 Ω at 100MHz
5103	4822 526 10704	Bead 50 Ω at 100MHz
5104	4822 157 11411	Bead 80Ω at 100MHz
5105	4822 157 11716	Bead 30Ω at 100MHz
5106	3198 018 31090	10µH 10% 0805
5108	4822 526 10704	Bead 50 Ω at 100MHz
5110	4822 157 71736	10µH 5%
5500	3104 308 21181	Transf. BS25320-00
5504	2422 536 00776	33µH 10%
5505	4822 157 11411	Bead 80Ω at 100MHz
5506	4822 157 11411	Bead 80Ω at 100MHz
5507	2422 536 00433	15µH 10%
5701	2422 536 00385	68µH 10%
5702	2422 536 00385	68µH 10%
5703	4822 157 11716	Bead 30Ω at 100MHz
5705	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11411	Bead 80Ω at 100MHz
5708	4822 157 11411	Bead 80Ω at 100MHz
5711	4822 157 11411	Bead 80Ω at 100MHz
5712	4822 157 11411	Bead 80Ω at 100MHz
5730	2422 549 00112	Line filt. 50V 3A
5731	2422 549 00112	Line filt. 50V 3A

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6103	4822 130 10871	SBYV27-200
6104	9340 548 69115	PDZ27B
6105	4822 130 11522	UDZ15B
6106	9340 548 66115	PDZ20B
6108	4822 130 80622	BAT54
6114	4822 130 10871	SBYV27-200
6115	4822 130 80622	BAT54
6116	3198 020 55680	BZX384-C5V6
6120	4822 130 11397	BAS316
6121	4822 130 11397	BAS316
6122	9322 129 34685	BZM55-C3V9
6130	9340 548 61115	PDZ12B
6132	4822 130 11416	PDZ6.8B
6133	4822 130 11397	BAS316
6134	4822 130 11397	BAS316
6140	4822 130 41487	BYV95C
6142	4822 130 80622	BAT54
6144	4822 130 11397	BAS316
6147	9322 200 23685	SML4736
6148	4822 130 11397	BAS316
6149	3198 020 55680	BZX384-C5V6
6150	9340 292 50135	BZG03-C200
6151	9340 548 71115	PDZ33B
6153	9340 292 50135	BZG03-C200
6156	4822 130 11397	BAS316
6504	9340 418 70133	BYV27-600
6505	9322 161 78682	SB360L-7024
6511	9340 548 61115	PDZ12B
6531	4822 130 11522	UDZ15B
6532	4822 130 11397	BAS316
6540	4822 130 80622	BAT54
6562	9340 548 67115	PDZ22B
6701	4822 130 11397	BAS316
6702	4822 130 11551	UDZS10B
6703	4822 130 11551	UDZS10B

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7100	3198 010 42320	BC857BW
7101	9340 219 30115	BC817-25W
7102▲	9322 160 34687	FQPF3N60
7105	3198 010 42320	BC857BW
7131▲	9340 557 69127	PHX9NQ20T
7140	3198 010 42310	BC847BW
7150▲	9322 149 04682	TCET1102
7501▲	9322 149 04682	TCET1102
7505	3198 010 42320	BC857BW
7506	3198 010 42310	BC847BW
7507	3198 010 42310	BC847BW
7509	3198 010 42310	BC847BW
7511	9337 331 10215	BST82
7512	9340 422 80115	PMSTA42
7531▲	9340 436 50115	BSP030
7532	3198 010 42310	BC847BW
7560	9340 219 30115	BC817-25W
7700	9322 163 86682	TDA7490L
7701	3198 010 42310	BC847BW
7703	3198 010 42310	BC847BW
7704	3198 010 42310	BC847BW
7705	3198 010 42310	BC847BW
7706	3198 010 42320	BC857BW
7707	3198 010 42310	BC847BW
7708	3198 010 42310	BC847BW
7709	3198 010 42310	BC847BW
7710	3198 010 42310	BC847BW
7711	3198 010 42310	BC847BW

11. Revision List

Manual xxxx xxx xxxx.0

- First release.